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Impressions
OF
THYROID SURGERY IN AMERICA.

BY W. SAMPSON HANDLEY, M.S. LOND., F.R.C.S. ENG.,
SURGEON TO THE MIDDLESEX HOSPITAL; HON. FELLOW OF THE AMERICAN COLLEGE OF SURGEONS.

THE United States was described to me by one of its citizens as the most magnificent piece of real estate on the face of the globe. If Canada be included as part of the "lot," the description is certainly accurate. Nevertheless this rich continent seems to be short, at any rate in certain portions of its extent, of one thing besides rubber—namely, iodine, that essential element of vital chemistry. I was told of a certain farm in a fertile district of Western Canada where the farmer was threatened with ruin on account of the infertility of his stock. The importation of fresh blood failed to overcome the difficulty, but acting on expert advice the farmer mixed a minute amount of iodine or iodide with the drinking water. The remedy worked marvels, comparable to the peeled wands employed by Jacob for a similar object, and at the expenditure of about two dollars a year for iodide the curse of infertility has been completely exorcised.

The shortage of iodine is indicated, so far as concerns the human race, by the great frequency of goitre, especially of the exophthalmic variety, of thyroid adenomata, and of consequent hyperthyroidism in certain States. The maximum frequency seems to be attained on the Pacific slope, and a practitioner from this region told me that between 50 and 60 per cent. of his women patients suffered from hyperthyroidism. While in England hyperthyroidism in men is rare, it is quite common in the States. At Dr. George Crile's Cleveland Clinic thyroid operations—there often done by several stages—appear to be twice as common as all other operations together, no doubt because of the reputation Dr. Crile has attained in this field of surgery. At the Mayo Clinic, too, as judged by one day's list, about one operation in six is a thyroid operation.

HEAVY INCIDENCE OF HYPERTHYROIDISM IN AMERICA.

It would be interesting to speculate as to the reason for the heavy incidence of hyperthyroidism in America. Is it due merely to a continental shortage of iodine, or is it due mainly to the strain of the strenuous American life? That Americans believe iodine-starvation is an essential factor is shown by the wide prevalence of the custom of giving iodine tablets as a routine to growing children. I believe one tablet a week, containing about ¼ gr. of iodine, is regarded as a reasonable dose, or the iodine may be given as an iodised table salt. It must be remembered that few American children can enjoy the yearly visit to the sea, and the generous provision of salt-water fish, which provide iodine for the growing English child. It would seem that the intellectual stress which often appears to produce exophthalmic goitre in the clever and ambitious American college girl might usually be harmless in a body adequately stocked with iodine.

It would be going too far to suggest that the restless activity which characterises America indicates a national basal metabolism raised by iodine shortage. It is natural that a great nation in the first flush of its national virility should be restless and eager, and there is no need to find a pathological explanation of these phenomena. Nevertheless the speculation is interesting.

It will be evident that the medical profession in America has enjoyed excellent opportunities for the study of hyperthyroidism, and it has used them very effectively. Particularly it has ended the controversy which has raged for years as to the advisability of giving iodine in hyperthyroid conditions. In Europe one school, headed by Kocher, considered that the administration of iodine in such conditions was a dangerous and indefensible practice, likely at the best to do no good, and at the worst to cause complete breakdown. Other authorities considered iodine a valuable remedy.

THE RÔLE OF IODINE IN THE TREATMENT OF HYPERTHYROIDISM.

A school of metabolists in America, headed by Plummer, of the Mayo Clinic, has reconciled these opposing views. They have shown that iodine is no permanent remedy for hyperthyroidism, but on the other hand that it has a powerful if temporary controlling influence on the symptoms for a period of several months when used in appropriate and moderate doses. The administration of a single large dose of 50 minims of Lugol's solution—a solution of iodine 5 per cent. and potassium iodide 7½ per cent.—will within 24 hours entirely change the clinical aspect of a case of hyperthyroidism of medium severity. The characteristic stare disappears, the emotional responses lose their uncontrolled violence, and the pulse becomes slower and less tumultuous.

In mild cases a judicious perseverance in the use of small doses of iodine may result in a clinical cure, but it is believed that this is due to the opportunity thus afforded to the thyroid cells to recover their normal function rather than to the direct effect of the iodine itself. In severer cases, if iodine is persisted in for a period of months, even in small doses, the initial improvement is ultimately followed by an acute crisis, manifesting itself by an alarming aggravation of all symptoms, even up to the point of mania.

Now comes the main practical point of the American teaching. Though iodine is not curative, it will in all cases, except in those already maniacal, produce such a temporary improvement as to enable a curative operation for the removal of the thyroid to be undertaken with hardly any risk. Iodine treatment not only relieves the symptoms but it brings about a great reduction in the vascularity of the gland and so reduces the risk of the operation considerably. In the Mayo and Cleveland Clinics, and in the service of Dr. Kanavel in Chicago, the mortality of thyroid operations is now less than 1 per cent. This is a surprising improvement, in view of the fact that many of these patients have already received serious damage to their heart muscle, as indicated by auricular fibrillation. Some authorities believe that the operation in such cases should be preceded by a course of digitalis, but others consider this unnecessary. The vital necessity for a pre-operative course of iodine is universally agreed upon.

THE TWO VARIETIES OF THYROID ENLARGEMENT.

Thyroid enlargements causing serious metabolic disturbance are divided by Plummer into two classes, exophthalmic goitre and toxic adenoma. In the former class there is diffuse parenchymatous hypertrophy and hyperplasia of the thyroid tissue; with exophthalmos, or at least a characteristic stare, a characteristic nervous psychical condition, and pulsating thyroid in which thrill and bruit are present. In the toxic adenoma class there is irregular enlargement of the thyroid, owing to the pressure in it of adenomata which show active hyperplasia of their epithelium. In the toxic adenoma exophthalmos is absent, the thyroid does not pulsate, or only slightly, nervousness, palpitation, tachycardia, vasomoter and gastro-intestinal symptoms and wasting are absent, the blood pressure is raised, and the cardio-vascular disturbances, such as auricular fibrillation and myocarditis, are in the foreground of the clinical picture.

According to Plummer the chemistry of the two contrasted conditions differs essentially. In exophthalmic goitre there is a condition of dysthyroidism due to absorption of a pathological secretion which is insufficiently or not at all iodised, while in toxic adenoma there is an excessive production and absorption of a completely iodised and presumably normal

secretion, a true simple hyperthyroidism. Clinically the distinction between these two classes is not as simple as the foregoing description would indicate, for mixed cases are frequent in which adenomata are found in goitres presenting some or all of the signs of exophthalmic goitre. Graham, of Cleveland, in opposition to Plummer, believes that the chemistry of the tissue of a thyroid adenoma does not essentially differ from the chemistry of the parenchyma of the gland. In his view no distinction can be drawn between dysthyroidism and hyperthyroidism, and he believes that exophthalmic goitre and toxic adenoma are clinical variations of a single disease.

Plummer believes that exophthalmic goitre and toxic adenoma respond differently to iodine in that the former state is invariably for a time benefited, while in the latter the giving of iodine is contra-indicated, except in small doses for a short time as a preliminary to operation. Graham, on the other hand, maintains that in cases of toxic adenoma previously untreated by iodine, the giving of the drug is invariably followed, as in exophthalmic goitre, by a period of improvement. Graham thus sums up his views on iodine administration: When thyroid tissue is hypertrophic and hyperplastic, whether it be the tissue of an adenoma or of the parenchyma of the gland, the administration of iodine is indicated if an operation is contemplated as a necessary preliminary to that operation. If, on the other hand, the thyroid tissue is in a colloidal or resting state, and no signs of hyperthyroidism are present, there is no indication for iodine so far as the thyroid function is concerned, and its ill-advised use may be decidedly harmful.

PREPARATION OF A PATIENT FOR OPERATION.

The introduction by Plummer of preliminary iodine treatment before operation has entirely altered the outlook in exophthalmic goitre, by greatly diminishing the risk of operation and making it easier by reducing the vascularity of the gland. Lugol's solution is universally used in America. On the patient's admission a dose of 50 to 60 minims is given by enema or by mouth, and subsequently doses of 10 to 15 minims are given by mouth for seven to ten days. By this time the basic metabolism has fallen to normal, the pulse has slowed down, and the mental condition has improved. The patient is now operated upon. The day after the operation 50 minims of the solution is given as an enema, and subsequently the small daily doses are continued during convalescence. Lugol's solution should not be given during acute thyroid breakdown or mania, and its prolonged use over a period of months is likely to be followed by an iodine crisis with aggravation of all the symptoms. If auricular fibrillation is present most American authorities advise a course of small doses of digitalis, but others appear to attach little importance to fibrillation, if the iodine preparation has been carried out. Prior to the operation it is usual to give an injection of scopolamine and morphine or of morphine alone.

Anæsthesia.—The usual practice in America is to rely mainly on local novocaine anæsthesia. Ethylene gas, or nitrous oxide, or nitrous oxide and ether are used to supplement the local anæsthetic, especially if the morale of the patient is poor.

MODE OF OPERATION.

It appears to be characteristic of American methods of operation to avoid the dislocation of the thyroid, the operative step upon which Kocher laid such stress. Associated with this difference it is usual in America to avoid the transverse division of the infrahyoid muscles, and even of the platysma (Crile), in order to preserve the contour of the neck. The usual incision is the collar incision made 2 inches above the sternum, so that its downward displacement during healing shall not bring it over the chest. The skin is undermined up to the hyoid and down to the sternal notch. The thyroid is exposed by a median incision through the deep fascia from the hyoid to the sternum. The infrahyoid muscles and fascia are then retracted by an automatic retractor, and other retractors draw the skin flaps out of the way upwards and downwards. Since the thyroid has not been dislocated it is impossible to see and ligature the main thyroid arteries and ablation is begun by division of the thyroid capsule along its outer margin. Behind this line the removal is entirely subcapsular and vessels, often very numerous, are seized as they appear, and from within the capsule. Thus the branches of the main arteries are secured instead of the arteries themselves. The lobe is carefully dissected from the trachea without exposing that tube. If the trachea is laid bare, according to Crile, troublesome coughing will ensue. If the other lobe is to be removed it is dealt with in the same way.

It is the policy of some of the leading thyroid surgeons to remove at one operation all the gland except a small posterior portion to ensure the safety of the parathyroids and the recurrent laryngeal nerves, while others proceed by steps, first ligaturing the superior thyroid artery on one side, and then removing the gland half at a time. It may be interesting to describe these personal variations of procedure a little more in detail, and I will take them in the order in which I happened to visit the various clinics.

A. B. Kanavel, in Chicago, is accustomed to remove nearly the whole gland at one operation and his mortality is very small. He considers that undesirable post-operative symptoms are less likely to occur after such a radical operation than after more limited removal. He gives scopolamine and morphine before the operation, and ethylene, if necessary, during its course, but novocaine infiltration is also used freely throughout, and especially at the posterior part of the gland.

I regret I am unable to describe from personal observation the operative procedure at the Mayo Clinic. Dr. D. C. Balfour, who has done so much in association with the brothers Mayo to develop thyroid surgery, was not operating at the time of my visit, nor did I happen to see a thyroidectomy by Dr. J. de J. Pemberton.

Crile, at the Cleveland Clinic, sometimes performs as many as 16 thyroid operations in a morning. This is made possible by his own dexterity, by perfection of organisation, and by the trained assistance which anticipates the operator's desires before he can express them. A proportion of the operations, too, consists merely in the ligature of the superior thyroid arteries, or rather of the superior pole of the gland. This is done under local anæsthesia through a small transverse incision. The capsule of the thyroid is divided in the line of the skin incision and a branch of the artery is seized. Traction is made upon this, and a mass ligature is then passed around or through the superior pole, so as to secure the main branches of the artery. Perhaps a week later one half of the thyroid is removed, or the whole gland if the patient's condition warrants it. Local anæsthesia with novocaine is, if possible, used throughout, supplemented if the patient's morale will not stand the ordeal by ethylene or gas anæsthesia. Novocaine is used in large quantities, perhaps up to 100 c.cm. of ½ per cent. solution. After the collar incision has been made and the flaps undermined upwards and downwards superficial to the platysma, the deep fascia is incised in the middle line and retracted sideways along with the infrahyoid muscles. Now comes a characteristic and important step. The novocaine needle is introduced beneath the capsule and the gland is distended with the novocaine solution. The needle is then plunged into the substance of the thyroid right to its posterior surface, and the solution again forcibly injected in this situation. Not only is a very efficient anæsthesia in this way secured, but the subsequent dissection is greatly facilitated by the separation of the tissue planes. It appears that the fluid injects all the lymphatics and thus spreads widely in the tissues around the gland itself. Crile appears to leave rather more of the posterior surface of the gland than Kanavel.

F. G. Starr, in Toronto, facilitates lateral retraction by making an incision through the deep fascia along the anterior edge of the sternomastoid on each side. In this city also thyroid operations are very successful.

Thanks to the opportunities afforded by the frequency of thyroid disease in America, the work of American pathologists and the skill of the American surgeons has been specially directed to the thyroid, and a national menace is in process of being effectively met.

In conclusion, I would emphasise the fact that this paper has no pretensions to completeness, nor does it attempt to assign to individuals their relative share in the progress which has been achieved.

Observations ON THE ACTION OF LOBELINE.*

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AND
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INTEREST in the action of the lobelia alkaloids was stimulated when Wieland[1] first isolated in 1918 a pure crystalline compound from *Lobelia inflata* (Indian tobacco). This was a basic crystalline substance to which the empirical formula $C_{22}H_{29}O_2N$ is assigned. The melting-point is 130–1°C. To this alkaloid the name alpha lobelin has been given. The hydrochloride is the most soluble salt and is the one usually employed in pharmacological studies. The characteristic chemical reaction of the alkaloid is, that on warming with water, aceto-phenone is split off. Wieland has also isolated two other compounds —lobelidine $C_{20}H_{25}O_2N$ and Base B—for which the empirical formula $C_{23}H_{27}O_2N$ was suggested. In a later paper Wieland, Schöpf, and Hermsen[2] have considered the chemistry of two further crystalline alkaloids—namely, lobelanin and lobelanidine. Lobelanin is apparently identical with the Base B previously mentioned, and the empirical formula now assigned to it is $C_{23}H_{25}O_2N$. It should be mentioned that the older lobeline of Dreser[3] probably consisted of a mixture of amorphous alkaloids. Wieland[4] studied the pharmacology of a probably impure lobeline sulphate prepared by Merck. He showed that in narcotised pigeons, after the administration of lobeline, the respiratory centre reacted to a smaller concentration of CO_2 in the alveolar air and blood than normal. Later, Wieland and Mayer studied[5] the action of purified lobeline, and proved it to be a powerful stimulant to the respiratory centre and to produce a great increase in the pulmonary ventilation. It was able to stimulate the breathing after the administration of narcotic and depressant substances like urethane, chloralose, and morphine. Lobelanin was found to have about half the effect on the centre as compared with lobelin.

Since the publication of this paper a considerable clinical literature has accumulated chiefly from American and continental sources. It is claimed that, clinically, lobelin restores regular breathing after overdosage with morphia, after carbon monoxide poisoning,[6] in accidents of anæsthesia, in asphyxia neonatorum,[7] pneumonia, and in stenosis of the respiratory passages. It is also repeatedly stated that lobelin acts specifically on the respiratory centre, and has no side actions on the vomiting centre or on the circulatory system. From the pharmacological point of view lobeline is usually classified with nicotine (Cushny,[8] Sollmann[9]), and by implication has widespread effects in the body. It was thought that as lobeline appeared to be coming into more general clinical use, a careful reinvestigation of its pharmacology would be of value.

* A paper read on Dec. 14th, 1926, to the Section of Pharmacology and Therapeutics of the Royal Society of Medicine.

Methods.—We have carried out experiments on dogs, cats, and rabbits. To avoid the complicating factor of anæsthesia a number of observations have been made on animals which had been decerebrated through a trephine opening in the skull. As the drug is advised in states of respiratory depression numerous observations were made in animals under the influence of ether, chloralose, and morphine, and after damage to the respiratory centre.

EXPERIMENTAL FINDINGS.

The Heart.

The movements of the heart were recorded with a myocardiograph after the method of Oliver and Schäfer,[10] with the chest open and the breathing maintained by means of artificial respiration. Initial and secondary effects may be described.

1. *Initial Effect.*—With doses of 1 mg. lobeline in the cat there is an immediate slowing of the heart—e.g., from 33 beats in 10 seconds to 26 beats. The force of the auricle is considerably diminished. The ventricle is similarly affected, but as a rule to a less extent. There is increased relaxation of the heart between the beats. This cardiac inhibition usually causes an initial fall of blood pressure. Sometimes the blood pressure may rise from the first in spite of the cardiac inhibition. The initial depression may

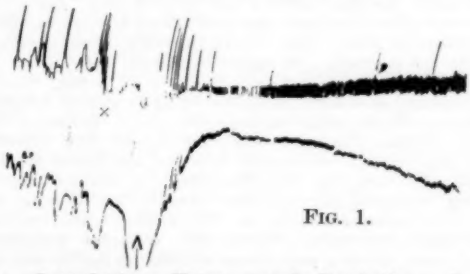


FIG. 1.

Cat. Decerebrate. Upper record = Respiration. Lower record = Blood pressure. Irregular breathing is present. At X an apneusis is shown on which are superimposed a number of small gasps. At the arrow 1 mg. adrenin was injected. Note the rise of blood pressure and the restoration of regular breathing.

be so marked as to cause a profound fall of blood pressure. If the heart is in an enfeebled state, the initial inhibition may arrest it altogether and cause death of the animal within a few seconds. The depression of the ventricle may persist for several minutes, especially if large doses of lobeline—e.g., 7 mg. in the cat—have been administered, but may also occur after smaller doses. It may only wear off gradually with the decline of the general lobeline action (Fig. 5).

2. *Secondary Effect.*—Following on this inhibition, the heart-rate returns to normal or may accelerate further. There may also be an increase in the force of the contraction of auricle and ventricle. With small doses of lobeline the heart gradually returns to its original force, but after larger doses—e.g., 3 mg.—secondary slowing and enfeeblement set in, which are only gradually recovered from.

After section of the vagi the initial slowing is less marked, a fact which suggests that it is partly due to stimulation of the vagus nucleus in the medulla.

After *atropine* the initial cardiac inhibition is abolished or is much less evident, showing itself by trivial slowing. This indicates that the inhibition which persisted after section of the vagi was due to stimulation of the peripheral vagal mechanism. The secondary augmentation of the heart is usually still evident, but we find that sometimes it may be absent. A curious secondary depression may be observed in the auricle. Coincidently with the rise of the blood pressure the auricle is found to relax less between the beats and there is in consequence marked diminution in the extent of the contraction. As the blood pressure falls this excessive state of tone passes off and the extent of the contraction returns to normal. Finally the secondary slowing and diminution of force already noted in the unatropinised animal set in.

Lobeline causes secondary paralysis of the peripheral part of the vagus. If the peripheral end of the cut vagus is stimulated after the administration of lobeline, it is found that a stronger stimulus must be employed to produce cardiac slowing than was necessary previously. Even with maximal stimuli only very slight inhibition is produced. This paralysis persists for several hours and wears off slowly. It is thus seen that the effects of lobeline on the heart are very complex. There is initial stimulation both of the vagus nucleus in the medulla and of the ganglion cells of the vagus in the nodes of the heart. These cells show subsequent paralysis. The acceleration which follows on the initial slowing is probably due to stimulation of the sympathetic ganglia which supply the heart. In addition lobeline has a direct poisonous action on the heart muscle. Even after the administration of atropine, doses of 3 mg. of lobeline leave the heart in a flabby condition and beating slowly and feebly.

Blood Pressure.

With the vagi intact there is often an initial fall of blood pressure—e.g., 10–20 mm. Hg—which is probably due to the cardiac inhibition already described. This is followed by a rapid rise of blood pressure to the extent of 50–100 mm. Hg. The pressor effect is more marked when the initial blood pressure is low. The blood pressure then gradually sinks to normal. It may, however, fall below the original level, particularly if doses of 3 mg. lobeline are used. A second injection then produces a further pressor effect, after which the blood pressure falls lower still. Thus in one experiment the injection of 1 mg. lobeline ultimately lowered the blood pressure from 150 mm. to 120 mm. Hg. A second dose of 3 mg. lowered the pressure finally to 60 mm. Hg. The pressure remains at the lower level or very gradually recovers. When this vascular depression is present, further injections of lobeline fail to produce their pressor effect. If an initial injection of 4 or 5 mg. of lobeline is made, there may be no pressor effect at all. The blood pressure gradually falls to reach a low level. In the pithed animal the rise of blood pressure after lobeline is marked and prolonged. This suggests that the drug has little if any action on the vasomotor centre. The after-fall of blood pressure may in part be due to the secondary cardiac depression already described, but paralysis of the ganglia along the course of the vasomotor fibres may be a more important factor. If the semilunar ganglion is painted with 2 mg. lobeline, stimulation of the cut end of the splanchnic nerve no longer produces the usual rise of blood pressure. Furthermore, when lobeline no longer produces pressor effects the injection of adrenin still causes a rise of blood pressure, indicating that the vasomotor terminals are still intact.

FIG. 2 A.

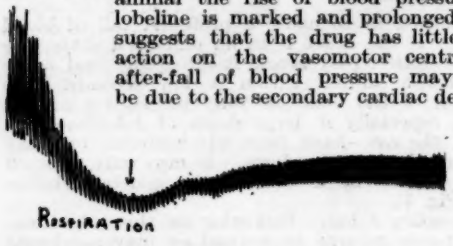
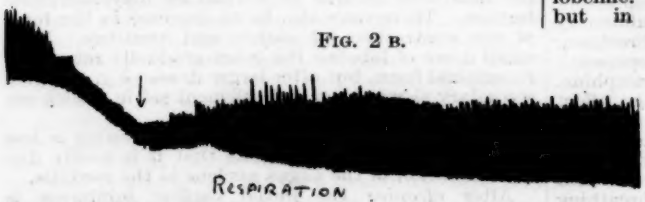


FIG. 2 B.



Dog. 6 kg. Ether. Record of respiration. A. Deep ether was administered till the breathing became slow and feeble. At the point marked with the arrow the anæsthetic was discontinued. Recovery took place slowly. B. The experiment was repeated, but at the arrow 1 mg. lobeline was injected. Note the immediate acceleration and increased force of the breathing.

The gradual fall of blood pressure which, as noted above, may be the sole effect of large doses of lobeline, is presumably due to paralysis of the vasomotor ganglia without any initial stimulation. The pressor effect of lobeline is less marked in the rabbit than in the cat or dog. It is also abolished to a considerable extent by the administration of large doses of morphine. Lobeline thus first stimulates and then paralyses the ganglia along the course of the vasomotor nerves. Complex blood pressure changes may be produced because of the variable effects on the heart which have already been described.

FIG. 3 A.

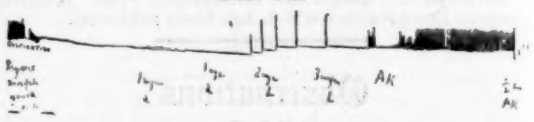
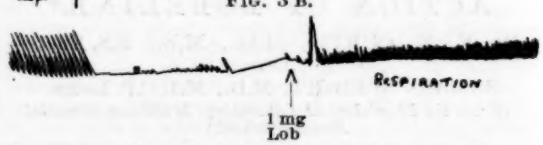


FIG. 3 B.



Dog. 6·5 kg. Morphia. A. An additional 10 mg. morphine were injected and apnœa resulted. The successive injection of 1 mg., 1 mg., 2 mg., 3 mg. lobeline only initiated a few ineffective gasps. Artificial respiration was maintained for half an hour after which slow gasps appeared which soon failed. B. Artificial respiration was resumed and at the point marked with the first arrow adrenin was injected. This raised the blood pressure. The artificial respiration was discontinued. The injection of 1 mg. lobeline now initiated regular breathing.

Respiration.

Lobeline markedly stimulates the respiratory centre and causes a considerable increase in the pulmonary ventilation. These effects are well marked in decerebrate animals which have recovered from the effects of the preliminary volatile anæsthetic, or in dogs under light morphia narcosis. We find, however, that the dose which produces respiratory stimulation also produces the circulatory effects already described.

There may be an initial increase in the rate of the breathing without alteration in depth, or even with diminution in depth. This acceleration is by no means constantly obtained, but it appears to be independent of the integrity of the vagi. Following on this, or as the first effect, there is marked increase in the depth of the breathing without change of rate or with slight slowing. In the dog (5–7 kg.) the respiratory effect is well marked with 1 mg. doses of lobeline. The breathing may remain regular, but in the dog especially it is common to find larger and smaller breaths alternating or irregularly interspersed. Doses of 5 mg. in the dog produce violent convulsive respiratory movements in which all the accessory muscles of breathing are involved. The respiratory record then shows marked irregularities; very shallow breaths are present between the very deep ones. Groups of rapid breaths occur. As the initial violent effect wears off a regular deeper breathing persists for ten minutes or longer. There can be no doubt that the threshold of the respiratory centre to CO_2 is lowered by lobeline, because the prolonged and intense hyperpnœa does not give rise to apnœa, but is followed by persistent hyperventilation.

In the cat we have sometimes noted that after the initial stimulating effect has passed off the breathing becomes shallow and slow. This may be associated with stridor. It may, therefore, be due to the bronchoconstriction and increased bronchial secretion which we have found to occur in this animal. In the cat under chloralose an initial inhibition of the respiratory movements of 5–10 seconds

duration may be seen. This is also frequently observed under the same conditions in the rabbit. In this animal there may be either diminution in the extent of the breathing or definite apnœa which is very similar to the apnœa produced by doses of 0·15–0·3 mg. of adrenin. It is unaffected by double vagotomy. The apnœa may possibly be due to bronchoconstriction which prevents the entry of air into the lungs. According to Roberts [11] adrenin apnœa is due to constriction of the blood-vessels supplying the respiratory centre. He has further shown that other vasoconstrictor drugs like pituitrin and barium chloride may cause inhibition of the breathing. It is, therefore, conceivable that the lobeline apnœa may belong to the same category and be due to anæmia of the medulla. In the rabbit in which small doses of lobeline depressed the breathing, the injection of 9 mg. lobeline resulted in increased depth of respiration.

The effects of lobeline were studied in animals under the influence of chloralose, morphia narcosis, deep ether anæsthesia, asphyxia, and after injury to the respiratory centre.

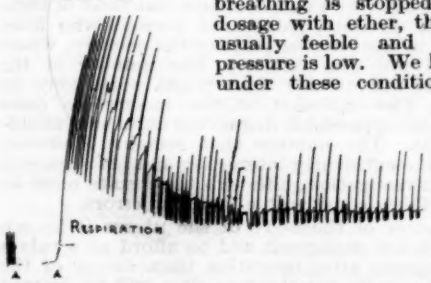
Chloralose.

In animals anæsthetised by the injection of 10 c.cm. of a solution of chloralose saturated at 40° C., the respiratory effects of lobeline are considerably less marked and wear off after a short time. Sometimes two or three deep gasps constitute the whole of the respiratory response. Sometimes no respiratory stimulation whatever results. The apnœa which may occur in animals under chloralose has already been noted.

Ether.

It is very difficult experimentally to produce respiratory paralysis with ether without at the same time depressing the circulation to a great extent. When the breathing is stopped by overdosage with ether, the heart is usually feeble and the blood pressure is low. We have failed under these conditions to restore the breathing with lobeline alone. It is possible that as the circulation is so feeble, adequate concentrations of lobeline do not reach the respiratory centre. We have, therefore, pushed our anæsthesia till the breathing was slow and feeble, and tried the effects of lobeline under these conditions. Fig. 2 shows that recovery is definitely more speedy after the injection of lobeline than in the control animal. Marked acceleration of the breathing results and there is increase in depth subsequently too.

FIG. 4.



Cat. Decerebrate. Artificial respiration. When it was discontinued apnœa was present. 5 mg. lobeline were injected and rhythmic breathing was restored.

Morphia.

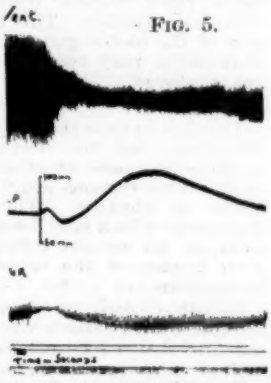
In the dog under light morphia narcosis respiratory effects can be obtained with lobeline as marked as in the decerebrate animal. In the cat 1 mg. morphia slowed the breathing to 13 in 130 seconds. The ventilation was very inadequate and the blood became dark in colour. The successive injection of 2 mg. and 3 mg. lobeline increased the rate of the breathing to 30 in 130 seconds. A second injection of 1mg. of morphia while the animal was still under the influence of lobeline caused much less slowing of respiration, and the blood remained a bright red colour. In another experiment 4 mg. morphia produced apnœa; regular though slow breathing was restored by 4 mg. lobeline.

Sometimes, if apnœa is produced by morphia, lobeline may succeed in initiating a few gasping respirations and then apnœa sets in again. Fig. 3 illustrates such an experiment. Artificial respiration had to be resorted to finally. When it was discontinued the apnœa still continued. The blood pressure was raised by the injection of adrenin and then lobeline succeeded in establishing regular breathing.

Lobeline can thus readily overcome doses of morphia which produce respiratory slowing. If complete paralysis of the respiratory centre is present, then lobeline is much less effective. We have already noted that under deep morphia narcosis the pressor action of lobeline is abolished. We are again faced with the difficulty of the low blood pressure. If the circulation is stimulated by adrenin, lobeline is much more potent.

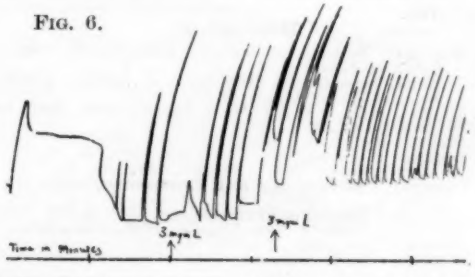
We have carried out a series of experiments in which the brain stem was divided rather low down in the region of the upper pons. We have been able to confirm the observations of Lumsden [12] concerning the alterations in respiratory rhythm which occur. Usually gasping breaths are found to alternate with long apneuses, during which the breath may be held in the inspiratory position for over one minute. The administration of lobeline under these circumstances has produced variable results. It may have no effect at all, or it may shorten the duration of the periods of apneusis. In the experiment illustrated in Fig. 4 the breathing failed after being shallow and irregular, and artificial respiration was commenced. This was discontinued and apnœa supervened. The injection of 5 mg. lobeline almost immediately produced a powerful inspiration. There was an increase in inspiratory tonus. Rhythmic breathing was restored, which was, however, somewhat irregular in character. In Fig. 6 apneustic and gasping breathing were present, and fairly regular breathing was obtained after the repeated injection of 3 mg. lobeline. In some of our experiments we have found adrenin alone, in large doses—e.g., 0·5 to 1 mg.—

FIG. 5.



Cat. Chloralose. Artificial respiration. Upper record = Ventricle. Middle record = B.P. Lower record = Auricle. At the signal 7 mg. lobeline were injected. Note the profound and prolonged inhibition of the ventricle.

FIG. 6.



Cat. Decerebrate. An apneustic breath is shown which persisted for one and a quarter minutes and was followed by a few gasps and irregular breathing. The repeated injection of 3 mg. lobeline restored rhythmic breathing.

remarkably effective (Fig. 1). It is thus clear that the damaged and partially asphyxiated respiratory centre present after low decerebration may sometimes be restored to regular rhythmic activity by lobeline. Sometimes the improvement in the cerebral circulation which results from adrenin may have the same effect.

Bronchi.

In the pithed cat we find that lobeline usually produces slight constriction of the bronchi. In the rabbit we obtained negative results. These results

are of interest in view of the fact that lobelia is so widely employed in the treatment of asthma. The vagal nerve-endings are subsequently paralysed, so that stimulation of the peripheral end of the vagus no longer produces the usual bronchoconstriction.

Other Effects.

It is claimed that the purified lobeline does not produce vomiting. We found, however, that this is not the case. Doses of 2 mg. or over in the cat not infrequently produce vomiting. The threshold of the vomiting centre is approximately four times as high as that of the respiratory centre. Micturition takes place almost constantly when quite small doses are injected. This is due probably to stimulation of the motor ganglia in the wall of the bladder. Defæcation may result if large doses—e.g., 5 mg.—are employed.

SUMMARY.

Lobeline is thus shown to be a powerful respiratory stimulant, but the doses which are necessary to produce increased breathing have widespread effects on the other systems which resemble in many respects those of nicotine. The drug produces cardiac depression which may be slight and rapidly recovered from, or severe and persistent. Its use in patients with disease of the myocardium should, therefore, be cautious.

Lobeline can overcome to some extent the respiratory depression which is produced by various narcotic drugs like chloralose, morphia, and ether, and it may prove of value in sudden respiratory failure from any cause. The respiratory centre which has been partially asphyxiated and injured as a result of low decerebration may sometimes be restored to rhythmic activity. Our experiments suggest that lobeline may be worthy of more extensive clinical trial, so long as the dangers inherent in the drug are borne in mind. If the blood pressure is low, lobeline will probably be found to be more effective if combined with circulatory stimulants. We have made no observations in man, and are unable to state what doses of lobeline will be found necessary in the human subject, but on the basis of our animal experiments we would suggest that doses of about 10 mg. or more, given intravenously, may be found effective.

The expenses of the above research were partly defrayed by a Government grant, made through the Royal Society to one of us (S. W.). We are indebted to Messrs. Zimmermann for some of the lobeline we employed.

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QUEEN ALEXANDRA MEMORIAL.—The highest ratio of contributions towards this memorial, which is to take the form of supporting the work of the Queen's nurses, is 21·6 per cent. in Peeblesshire; the lowest, 0·89, in London. In England, Rochdale is at the head of the list with 3·5 per cent.

EXTENSIONS of the Dudley-road Hospital, belonging to the Birmingham Guardians, which have just been opened, have, it is claimed, made it the largest institution of its kind outside London. Since it was opened in 1887 for the treatment of infirm, bedridden, and chronic cases it has undergone many changes. During the war it was a military hospital, but since the guardians resumed possession it has become a general hospital where patients are treated, not as subject to the Poor-law, but as members of the general public. Last year 13,000 patients passed through the hospital.

CANCER OF THE UTERUS.

A STATISTICAL STUDY; WITH SPECIAL REFERENCE TO THE RESULTS OF OPERATION.

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AND
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(From the Department of Pathology and Bacteriology, University of Leeds, and the Statistical Department of the Medical Research Council.)

Introductory.—The data on which this investigation is based comprise all the patients with cancer of the cervix and cancer of the body of the uterus amongst those operated on in the Women's Hospital, Leeds, and Gynæcological Wards of the General Infirmary, Leeds, during the decennium 1911–20, in which the carcinomatous nature of the growth was confirmed by histological examination. The series embraces in all 214 cases of cancer of the uterus, of which 176 were located in the cervix and 38 in the body. The post-operative histories of all these patients, with a few exceptions, have been traced for five years at least after the operation, or till the date of death if this occurred under five years thereafter. Some who survived the operation for five years have been traced as still alive for much longer periods, as will be described later. In a certain number of patients—namely, 23—or practically 10 per cent. of the total series, it was impossible to trace the complete post-operative histories. The proportion of untraced cases may appear relatively large, but in view of the fact that the area of country from which the patients were derived is very extensive, and that most of them were either servants, lodgers, or persons who lived in villages in the remoter parts of the country, where letters did not find relatives, the number of the untraced is not greater than might reasonably be expected. The exclusion of the incomplete cases reduces to an appreciable degree the number available for analysis. The number that remains, however, constitutes a sufficiently interesting and homogeneous series for investigation, although the results must be subject to fairly considerable sampling errors.

Since cancer of the body of the uterus is known to be much less malignant and to afford as a rule a better prognosis after operation than cancer of the cervix, the results for the two sites will be treated separately, but will be placed in apposition for comparative purposes.

Cancer of the Cervix Uteri.

The majority of the patients with cancer of the cervix that come under review may be classified into two broad groups: (1) those undergoing a complete operation—namely, a Wertheim, an abdominal hysterectomy, or a vaginal hysterectomy; (2) those who were treated by what may be termed palliative methods, the curette, cautery, or who were merely subjected to exploratory laparotomy. Into the first group fall 116 patients, in 12 of whom the post-operative histories could not be ascertained. Of the second group, comprising 52 cases, seven were not traceable. The cases in this group are assumed to be those that were either unsuitable for a radical operation or inoperable.

In addition to these two comprehensive groups there were eight patients with cervical cancer; five of these, though curetted, would not submit to radical operation, one had an amputation of the cervix uteri, another an amputation of the stump (cervix) for cancer following a former operation abroad for removal of the body of the uterus, evidently for cancer three years previously, and another had an operation of an indeterminate nature (probably hysterectomy, as death occurred in hospital). The distribution of the subgroups of cases of cervical cancer treated by the several operative methods according to duration of post-operative life is shown in some detail in Table I.

TABLE I.—*Showing the Duration of Post-operative Life in Patients with Uterine Cancer according to Nature of the Operation.*

Nature of operation.	Duration of post-operative life.												Totals.
	Died in hospital.	–3/12	3/12–6/12	6/12–9/12	9/12–1 y.	1 y.–2 y.	2 y.–3 y.	3 y.–4 y.	4 y.–5 y.	No. alive at 5 or more years after operation (years in brackets).	No. who survived 5 years but died at year given (in brackets).	Not traced.	
Cervix Uteri.													
Wertheim's operation. ..	17	—	4	7	5	16	1	2	1	12 [5, 5, 5, 5, 5, 6, 6, 8, 9, 10, 11, 11]	3 [5–6, 7–8, 7–8]	8	76
Abdominal hysterectomy..	2	1	1	1	3	4	1	3	—	3 [5, 6, 8½]	—	2‡	21
Vaginal hysterectomy. ..	1	1	—	1	1	5	—	1	1	5 [5½, 6, 9, 9, 12]	1 [6–7]	2	19
Palliative or exploratory operations*	3	8	13	6	3	8	3	1	—	—	—	7‖	52
All others	1	—	1	2	—	1	1	1	—	—	—	1	8
Totals	24	10	19	17	12	34	6	8	2	20	4	20	176
Corpus Uteri.													
Panhysterectomy or hysterectomy..	4	—	2†	—	5	2	4	4	—	11 [5, 5, 6, 6, 6, 6, 8, 8, 10, 12, 13]	2 [6–7, 7–8]	4§	38

* Presumably inoperable. † Includes one curetted only; omitted from survivorship table.
‡ Includes one } who died in less than five years after operation but exact duration of post-operative life unknown.
‖ Includes two }
§ Includes one with nature of operation uncertain.

Cancer of the Corpus Uteri.

As already mentioned, particulars were obtained of 38 cases of cancer of the body of the uterus. All the patients were stated to have undergone hysterectomy or panhysterectomy with the exception of two, of whom one was merely curetted and the other had an operation of unrecorded nature. The post-operative histories were traced for five years after operation or till the date of previous death in all except three of the 36 patients undergoing hysterectomy, leaving 33 cases available for analysis. The number is relatively small, but the results have been tabulated for purposes of contrast in a manner similar to that adopted for the cases of cervical cancer.

Duration of Post-operative Life in the Different Groups of Cases.

We now come to consider and compare in greater detail the characteristics of the group of cases of cervical cancer treated radically and that treated by palliative measures. A table was prepared, but is not published, showing for these two groups separately the distribution of durations of post-operative life when the patients were arranged in decennial age-groups, 25–34, 35–44, &c., and the percentages of the totals traced in these age-groups who survived three years and five years respectively after operation. The numbers in the different decades of life at operation were small, however, and no emphasis can be laid on such differences as appeared to exist in the percentages of survivals therein. Amongst the 104 of all ages who were operated on radically and who were traced for five years at least after operation or till the date of earlier death, 32, or 30·8 per cent., survived the operation for three years and 24, or 23·1 per cent., for five years. Of those between the ages 35 and 44 years at operation who survived the event five years at least, one was alive eight years and another 11 years afterwards. Amongst those in the decade 45 to 54 years at operation, one was still alive at eight and a half years, two at nine years, one at ten years, one at 11 years, and another at 12 years thereafter. Four survived the operation five years but died later, one in the sixth year, one in the seventh year, and two in the eighth year. As the cause of death in three of these cases, including that of a patient dying before the completion of the seventh year and another of one dying just under eight years after operation, was cancer, freedom from recurrence for five years after operation obviously cannot be assumed to indicate a cure as is frequently asserted. A feature of special interest in the table was the high mortality-rate from the effects of the operation; 20, or 17·2 per cent., of the 116 patients who had a radical operation died in hospital. Of the 45 patients treated by palliative measures, one only in the age-group 35–44 years survived the operation for three full years.

The distribution of the patients with cancer of the body of the uterus according to duration of post-operative life for the decennial age-groups was also tabulated. The numbers in the different decades of life at operation were again too small to warrant any conclusions regarding differences therein in the percentages that survived for three years or for five years respectively. Of those who survived the operation for five years, two were still alive at eight years, one at ten years, one at 12 years, and a fourth at 13 years thereafter. Two survived the event five years but died subsequently, one in the seventh and the other in the eighth year, both of recurrence of the disease.

The results in the different groups can be brought into greater contrast by means of survivorship tables. In Table II. are shown in separate columns survivorship tables for the first five years after operation for: (*a*) the group of patients with cancer of the cervix uteri who were treated by radical operation; (*b*) the patients treated by palliative measures; and (*d*) the group of patients with cancer of the corpus uteri who were treated by radical operation. For comparison with these, another survivorship table for cases of cancer of the cervix uteri is entered in column (*c*). This table is a modified form of a survivorship table which is contained in Dr. Greenwood's (1926) report to the Ministry of Health on the Natural Duration of Cancer, and which shows the number

TABLE II.—*Survivorship Tables for Five Years After Operation for Cancer of the Cervix and Body of the Uterus.*

	Cancer of the cervix uteri.			Cancer of the corpus uteri.
	Radical operation. (Wertheim, hysterectomy). (*a*)	Palliative operation (curettage, cauterisation, &c.). (*b*)	Natural duration series* (no operation). (*c*)	Radical operation (hysterectomy). (*d*)
	(104)†	(45)†	(1248)†	(33)†
l_0	1000	1000	1000	1000
l_1	567 ±49	267 ±66	362 ±13·6	697 ±80
l_2	327 ±46	89 ±42	147 ±10·0	636 ±84
l_3	308 ±45	22 ±22	79 ± 7·6	515 ±87
l_4	250 ±42	0	44 ± 5·8	394 ±85
l_5	231 ±41		25 ± 4·4	394 ±85

* Greenwood, M. (1926), vide ref. † No. of observations.

of survivors at each year for six years from the reputed date of onset of first symptoms in a series of 1749 patients with cervical cancer who received no operative treatment. The patients under review were only treated after the symptoms had been present on the average for a period of from nine to 14 months, or approximately a year. The proper comparison of the survivorship tables for the hospital cases is thus not with the survivorship table for the untreated cases as it is given in the report mentioned, but with a table constructed with the untreated survivors at the end of one year—namely, 1248 out of the original number 1749, taken as the base line or 1000. A comparison of columns (*a*) and (*c*) of the table representing the survivorship amongst the groups of the radically treated and the non-treated cases of cancer of the cervix respectively shows the very favourable results that ensue from treatment by radical operation. Notwithstanding the considerable mortality in the first post-operative year due to the effects of the operation, which has been described as 172 per 1000, the number of survivors at the beginning of the second year after operation is significantly in excess of that in the comparable group amongst the untreated. At the beginning of the fourth year after operation the number of survivors from the original number, or radix, 1000, in the group treated by radical operation is almost four times, and at the beginning of the sixth year fully nine times, the comparable numbers shown in the untreated group. Column (*b*) of Table II. shows the rapid elimination by death of the patients in the group treated by palliative measures, which consists largely of the cases that may be regarded as unsuitable for operation. At the beginning of the second year after operation the proportion of survivors in this group is less than half that shown amongst those radically treated, in spite of the high mortality in the latter group from the effects of operation. Out of 1000 undergoing operation, none survives to begin the fifth year after operation, whereas 250, or one-fourth of the original number of those treated radically, survive at the corresponding stage.

No survivorship table for patients with cancer of the body of the uterus allowed to run its natural course is available for comparison with column (*d*) of Table II. As the total number of cases in this group is relatively small, the standard errors attached to the numbers of survivors at the beginning of each successive year out of the original 1000 are considerable, and probably small stress can be laid on the differences that are shown, but it seems worthy of note that whereas 515 of the original 1000, or 51·5 per cent., survive the third year in cancer of the body; the corresponding proportion in cancer of the cervix radically treated is 308, or 30·8 per cent. This difference is statistically significant. The percentage surviving five years is 39·4 when the site is the body, and 23·1 when the site is the cervix. This difference, though suggestive, cannot, however, be judged significant on the numbers available.

There are certain other points for which data are available for comparison in the two groups of patients: (1) those with cancer of the cervix uteri with the two subgroups, the radically treated and the inoperable cases; and (2) those with cancer of the corpus uteri treated radically. These are: (*a*) the average age at operation; (*b*) the alleged duration of symptoms; (*c*) the relationship to childbirth; and (*d*) the histological nature of the primary growth.

The Average Age at Operation.

Of the 116 patients with cervical cancer undergoing radical operation the mean age at operation was 46·7 ± 0·9 years, the standard deviation of the age distribution 10·2 years, and the coefficient of variation 22 per cent. For the 52 patients treated by palliative measures, the mean age at operation was 49·8 ± 1·6 years, the standard deviation 11·5 years, and the coefficient of variation 23 per cent. For the whole series of patients with cancer of the cervix uteri the mean age at operation was 47·4 ± 0·8 years. The variability in the distribution of ages in the two groups, the radically treated and the palliatively treated, is thus practically identical, and though the mean age is three years higher in the latter than in the former group, such a difference cannot be judged significant in view of the size of the errors of random sampling.

The mean age at operation of the 38 patients with cancer of the body of the uterus was 52·4 ± 1·0 years, and the coefficient of variation 12 per cent. The mean age in this group is thus five years higher than that of the group of patients with cancer of the cervix, a difference which is certainly significant, indicating that carcinoma of the body occurs on the average later in life than cancer of the cervix.

Alleged Duration of Symptoms.

In 17 out of the 116 patients with cervical cancer who were treated by radical operation, no estimate of the duration of symptoms could be obtained. The average duration in the remaining 99 patients was 10·3 ± 1·3 months. The limits of the range were less than a month and 84 months. The wide degree of dispersion in the series of durations is shown by a standard deviation of 13·0 months, and a coefficient of variation of 126 per cent. Of the 52 patients receiving palliative treatment, the alleged duration of symptoms was ascertained in 49 instances. The average duration in these was 9·0 ± 1·1 months. The variability in duration was somewhat less than in the other group. Though very slight reliance can be placed on the reputed duration of symptoms, and no significance can be attached to the difference of one month in the average durations of symptoms in the two groups, the radically treated and the palliatively treated, it is of interest to note that the mean reputed duration of signs of the disease preceding operation is not greater in the group of presumably inoperable cases than in the group not considered too far advanced for radical treatment.

As in patients with cervical cancer, the alleged duration of symptoms in patients with cancer of the body of the uterus was very variable. The limits of the range in reputed duration were one month and 48 months, and the coefficient of variation was 79 per cent. The average value was 14·0 ± 2·2 months. This cannot be said to differ significantly from the average duration in the cervical cases.

Relationship of Childbirth to Cancer of Uterus.

There is now a considerable amount of evidence to show that childbirth predisposes to cancer of the cervix of the uterus, apparently from the trauma incident to this process, though no relationship appears to exist between it and cancer of the corpus uteri. The distribution of the two separate series of patients with cancer of the cervix and body of the uterus respectively in the present data according to marital condition and the number of children borne is shown in Table III. Miscarriages, though recorded, were excluded from consideration, as information regarding these was believed to be very unreliable. Amongst those with cancer of the cervix whose pre-operative histories were traced, the proportion of nulliparous women was 17 out of 158, or 10·8 ± 2·5 per cent., a result in close agreement with that described by various other observers. The proportion of nulliparæ amongst the cases of cancer of the body of the uterus was 15 out of 37, or 40·5 ± 8·1 per cent. The difference is 29·7 ± 8·5 per cent., which is statistically significant and indicates a quite definite relative preponderance of parous women in the former group.

Of the total cases of cancer of the uterus in the series under observation, about 96 per cent. occurred at ages over 30. The numbers of single and married women (including widows) at ages over 30 in Leeds in 1921, as given in the census, are 19,433 and 97,299 respectively, so that single women form 16·6 per cent. of the total women in this period of life. Estimates of the proportion of sterile marriages in the general population have been given by various

TABLE III.—*Showing the Distribution of the Patients with Cancer of the Uterus according to Civil State and Parity.*

Site of tumour.	Civil state.												—		
	Single.		Married.									Unknown.	Total No. with known history.	Percentage of nulliparæ.	Average No. of children per married woman.
			No. of children.												
	Np.	P.	0	1	2	3	4	5	6	7	8+				
Cervix uteri ..	5	3	12	13	19	21	20	9	9	11	36	18	158	10·8 ±2·5	4·86 ±0·29
Corpus uteri ..	9	0	6	9	4	3	2	1	—	—	3	1	37	40·5 ±8·1	2·43 ±0·55

Np. = Nulliparous. P. = Parous.

observers. In the report on the Fertility of Marriage based on data collected for England and Wales at the census in 1911, the proportion of childless marriages in families of completed fertility is given by Dr. Stevenson (1923) as 16 per cent. For the same period in Scotland the corresponding figure is stated to be 11·5 per cent. If it be assumed that the figure for England and Wales—namely, 16 per cent., which it is of interest to note is in remarkably close agreement with the figure given by Matthews Duncan (1866) for Scottish data in 1855, holds for Leeds an estimate of the nulliparæ among married women over 30 years of age in this city may be obtained. This figure, added to the total of single women corrected for incidence of parity therein, would give the total number of nulliparous women over 30. As illegitimate births in Leeds form fully 5 per cent. of the total births, some reduction in the single women to allow for parity would appear to be necessary. Unfortunately, suitable data to make this adjustment are not available. The correction required may not be so considerable as appears at first sight, however, as many single women who have borne children in early life will probably be married by the time they attain the age of 30. If it be assumed that to obtain a rough estimate the nulliparæ may be computed in the way described but without any adjustment of the number of single women, nulliparous women would appear to form 30 per cent. of the female population over 30 years of age in Leeds. The assumption that even as many as 10 per cent. of the single women are parous, probably an excessive figure, only reduces the estimated proportion of nulliparæ amongst women over 30 years to 28 per cent. Such estimates can only be considered very rough approximations, but it is interesting to note that the proportions of nulliparous and parous women in the female population in Leeds above 30 computed in this way diverge so little from the corresponding proportions in the series of patients with cancer of the body of the uterus that they cannot be adjudged significantly different, as the differences fall within twice the range of their standard errors, whereas the proportion of nulliparous women amongst the patients with cervical cancer is considerably less than in the female population at the corresponding ages.

At various times suggestions have been put forward that the number of children borne has some association with the incidence of cancer of the cervix uteri. The data available are not sufficiently numerous to investigate this question fully, but it seems to be of interest to note that the average number of children per married woman amongst those traced with cancer of the cervix was 4·86 ± 0·29, whereas the average number amongst the married women with cancer of the body was 2·43 ± 0·55, a significant difference. The period of reproductive life, it must be admitted, is doubtless incomplete in some of the patients, but any such inequality in the two groups would tend to exaggerate the difference in the mean numbers of pregnancies, as the average age of the patients with cancer of the body of the uterus has been shown to be about five years higher than that of those with cancer of the cervix.

The Histological Nature of the Primary Growth.

As a detailed histological examination of the growth had been made in all the cases under review, a brief account may be given of the incidence of the different types, though the data do not warrant an attempt to draw conclusions regarding any apparent association between type of tumour and post-operative results. Of the 176 cases of cancer of the cervix uteri, 140 were classed as squamous celled, 24 as spheroidal celled, 1 as basal celled, and 11 as adenocarcinomatous. The first and second of these groups differ only in respect of the presence or absence of epidermoid whorls and keratinisation, and are really the same tumour with varying grades of differentiation. It is probable that in nearly every case epidermoid whorling could have been demonstrated had a sufficiently prolonged and detailed examination been made. No prognostic significance could be attached to the differing histological pictures within this group in the present series. The case of basal celled cancer not only showed no evidence of whorling or keratinisation, but resembled in a quite remarkable way rodent ulcer of the skin. This patient, who was aged 44, was still alive five years after operation (Wertheim), but died soon after from pneumonia.

Of the group of 11 patients with adenocarcinoma, 9 were traced, and of these 3 died under a year, 1 under two years, and 1 under four years, while 4 are still alive at periods varying from 5 to 11 years from operation. This is a good result, but the numbers are too few to warrant generalisation. In several of the specimens squamous metaplasia was present.

All the 38 malignant tumours of the corpus uteri in the series were adenocarcinomatous in type except five, which were spheroidal celled. These five occurred in patients who were between 50 and 56 years of age at the time of operation, with symptoms reputed to have been present for periods varying from two months to a year. Four of these patients were treated by panhysterectomy, with the result that all died within 18 months thereafter, one with recurrence in the bowel.

Summary and Conclusions.

The foregoing paper contains an analysis of the post-operative histories of, and certain relevant features such as age distribution, reputed duration of symptoms, and parity in, 176 hospital patients with cancer of the cervix uteri and 38 patients with cancer of the corpus uteri. Though the numbers available are, perhaps, not sufficient to warrant any dogmatic statements on the various points investigated, the results seem sufficiently reliable to give some general indication as to what may be expected in larger series of cases. The main points that emerge from the inquiry are :—

1. The results of radical operation in cancer of the cervix uteri must be considered very favourable notwithstanding the relatively high operative mortality. The extent of the gain from this form of treatment may be gauged from the fact that in the group so treated the number of survivors at the

beginning of the fourth year after operation is nearly four times, and at the beginning of the sixth year after operation fully nine times the numbers in the comparable groups in a long series of cases permitted to run their course without treatment.

2. Though the post-operative survivorship amongst the patients with cancer of the corpus uteri treated by radical methods cannot be compared with that in a non-treated series, as such a series is not readily available, the figures suggest that the end-results in these patients are more favourable than those in patients with cancer of the cervix treated radically.

3. The average reputed duration of symptoms prior to operation in the patients with cancer of the cervix who were treated radically diverges very slightly from that in the patients who were considered unsuitable for operation; the average duration of signs in all the patients with cervical cancer is about four months less than for the patients with cancer of the body, but this difference cannot be judged significant.

4. The mean age at operation of the patients with cancer of the corpus uteri has been shown to be about five years higher than that of the patients with cancer of the cervix. The average durations of symptoms in the two groups are not significantly different, so it is evident that cancer of the corpus uteri appears later in life on the average than cancer of the cervix uteri.

5. The proportion of nulliparæ amongst the patients with cancer of the cervix uteri is 10·8 per cent. This is significantly lower than the proportion amongst those with cancer of the corpus uteri—namely, 40·5 per cent. The average number of children per married patient with cancer of the cervix uteri is 4·86, which is twice the average number borne by patients with cancer of the corpus uteri. These results support the alleged association between childbirth and cancer of the cervix.

We are indebted to the gynæcological surgeons of the General Infirmary and the Women's Hospital, Leeds, for permission to investigate their cases.

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ACUTE PANCREATITIS.

CLINICAL FEATURES AND TREATMENT.

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THIS paper is based upon 51 cases of acute pancreatitis, which have been treated at the London Hospital during the years 1911-24. In considering the clinical aspect of this condition I propose to deal with the general features, symptoms and signs, treatment and after-results, in as far as the latter are obtainable.

General Features.

Although acute pancreatitis is usually considered to be commoner in men, in this series the incidence was reversed, as out of 51 collected cases, 31, or 60·8 per cent., were females. The youngest member was a girl of 11, and the oldest a female of 73. The previous history in most cases was very interesting, indicating that the condition is one which is progressive, and that many attacks may occur before the final abdominal catastrophe. The previous histories may be summarised as follows:—

Previous similar attacks	31
No previous attacks	15
Inconclusive history	5

One obvious fallacy in compiling the above statistics is that the patient may confuse abdominal pain due to other causes—e.g., cholecystitis—with pain due to pancreatitis. However, the difficulty was realised while analysing the histories, and guarded against as far as possible.

The series included one case in which a laparotomy was performed for abdominal pain of obscure origin. A condition of "chronic pancreatitis" was diagnosed and the abdomen closed. One month later the patient was hurriedly returned from convalescent home with an attack of acute hæmorrhagic pancreatitis, which was confirmed at post-mortem. An even more striking instance of the recurrence of the condition with increasing severity may be quoted in more detail:—

Case of A. B., brewer's drayman.

1907: Aged 36. Was suddenly seized with acute abdominal pain. The diagnosis of "acute alcoholic gastritis" was made, and the patient attended the medical out-patient department. He was discharged a few weeks later as cured.

1910: Drank a glass of cold water and was suddenly seized with severe pain, similar to previous attack, vomited several times, and was admitted to hospital. On examination some tenderness and rigidity was present over the gall-bladder area. The symptoms abated and he was discharged.

February, 1924: Third severe attack while rolling barrels. Pain so acute that patient became unconscious. On admission to hospital shock was well marked, cyanosis was present, and rigidity was entirely absent. A diagnosis of acute pancreatitis was made, and the abdomen opened through a right paramedial incision. Fat necrosis was general, the pancreas was swollen and œdematous, and the gall-bladder was distended, but no stones were present. Cholecystotomy was performed and the patient recovered.

July, 1924: The patient was seized with a fourth attack similar to those described above. He was admitted moribund and died shortly afterwards.

Symptoms and Signs.

The onset of the condition is as sudden as that of any abdominal emergency, and resembles a perforated ulcer, in that the patient can usually describe precisely what he was doing at the time of onset. Pain is severe and in proportion to the severity of the attack; hence in severe attacks the patient may be collapsed and unconscious. The pain is epigastric in origin, and usually radiates through to the back. In the early stages the temperature is depressed in proportion to the shock, and the pulse is correspondingly slow and feeble. As shock passes off, the pulse improves and the temperature rises to slightly above normal, while finally both may be influenced by the onset of peritonitis.

General cyanosis, particularly of the face and extremities, was noted in 12 cases of this series; as some cases were erroneously diagnosed it is reasonable to presume that cyanosis may have been present but was unrecognised. Probably this cyanosis is due to the restricted movements of the diaphragm, consequent on subdiaphragmatic irritation or spasm of the crura. Localised cyanosis, which has occasionally been noted—e.g., in the loin—was not recognised in any of these cases.

Abdominal rigidity is a variable factor and is somewhat paradoxical, in that it varies inversely to the severity of the condition. Thus in severe cases shock is so marked that the musculature is generally relaxed, and protective rigidity is thus in abeyance. When shock subsides rigidity asserts itself, the muscles reacting to the inflamed peritoneum covering the pancreas. In cases of less severity or more localised infection, rigidity may be board-like from the commencement, particularly in the epigastrium. Vomiting occurred in practically all the cases, and was occasionally very protracted. Slight jaundice was noted in two cases. The presence of a tumour was noted in nine of the cases under review, five of these were localised rounded swellings in the upper abdomen, three in the left hypochondrium, and two in the epigastrium, the remaining four being indefinite in nature. Localisation of infection would be expected to produce a palpable swelling; in other cases where merely induration and turgidity are present, the

possible rigidity and probable obesity mitigate against detection of the pancreatic enlargement.

Special tests are, naturally, of little value in abdominal emergencies. Glycosuria may readily be recognised, but is uncommon, being present in only three out of 30 cases. The absence of glycosuria is explained by the fact that the islands of Langerhans escape destruction. Loewi's mydriatic test, consisting of installation of adrenalin in the eye, a positive result being obtained if the pupil dilates (possibly eccentrically), was definitely obtained in five cases. Apparently this under-estimates its utility, as Waring and Griffiths [1] found it positive in three out of four cases of acute pancreatitis. The diastase index, normally 10 to 20 units, has obviously little diagnostic value in emergency surgery, although in one case in this series 100 units were present. Also other acute abdominal conditions may diminish the value of this test by raising the index; thus Barling records a case of pneumococcal peritonitis with a diastase index of 50 units.[2]

Treatment.

Considerable discussion has revolved around the question of treatment, and in considering the treatment of any condition complicated by more than one pathological lesion, due regard must be paid to all abnormalities present. The most obvious pathological condition to be commonly associated with acute pancreatitis is cholecystitis, usually indicated by the presence of gall-stones. Hence this question is considered in two groups, that is, cases with gall-stones present and those in which they are absent. This is admittedly an arbitrary distinction, as cholecystitis may be present without stones which may not yet have formed, or although formerly present, may have passed along the ducts. Much emphasis has been laid upon the association of acute pancreatitis and gall-stones, the association of which has possibly been over-estimated. In 14 cases published by Waring and Griffiths, gall-stones were present in only two cases; in this series, in which adequate notes were obtainable, gall-stones were present in 25 out of 49 cases, that is, 51 per cent.

With regard to the converse association, it is stated that in 25–30 per cent. in which operation is performed for gall-stones, some degree of pancreatitis is present. It must, of course, be admitted that in any case it is extremely difficult to recognise at operation a minor degree of pancreatic involvement. Forty-seven cases were submitted to operation, the remaining four not recovering sufficiently from shock or toxæmia to allow of surgical interference.

For the purpose of comparison the operative measures may be divided into the following three procedures: (1) drainage of gall-bladder or bile-ducts, usually combined with drainage of the peritoneal cavity; (2) drainage of the peritoneal cavity alone, with or without exposure of the pancreas, by tearing through its covering of peritoneum; (3) incision into and drainage of the pancreas through the abdominal wound with or without the two previous procedures.

Results.

Following the scheme outlined above we find the results as follows:—

GROUP 1.	*Gall-stones Present.*		2. *Absent.*	
	R.	D.	R.	D.
Drainage of gall-bladder or bile-duct ..	12	9	4	1
Drainage of peritoneal cavity	3	0	9	3
Incision and drainage of pancreas ..	0	1	1	4
	15	10	14	8

R.= Recovered. D.= Died.

The total mortality of cases submitted to operation: 18 died and 29 recovered—i.e., 38·3 per cent. The total mortality of all cases (including four too ill for operation), 22 died and 29 recovered—i.e., 43·1 per cent.

[1] Waring and Griffiths: Brit. Jour. Surg., January, 1924.
[2] Barling: Brit. Med. Jour., April 28th, 1923.

In comparing the above groups we find the results of each operative procedure as follows:—

	R.	D.	Mortality.
Drainage of gall-bladder or bile-ducts ..	16	10	38·5 %
Drainage of peritoneal cavity	12	3	20 %
Incision and drainage of pancreas ..	1	5	83·3 %

In commenting upon the above results, although the mortality of drainage of the gall-bladder or biliary passages is high, yet it seems more reasonable to drain the biliary passages where definite pathological changes are found, especially if local conditions render this easy of accomplishment. It is well known that cases have occurred in which a stone is impacted in the ampulla of Vater, and which appears to be the actual cause of acute pancreatitis, and therefore, if stones are discovered, steps should be taken to exclude this possibility.

Distension of an apparently healthy gall-bladder is frequently found, and is to be expected under these circumstances, when the head of the pancreas is swollen and œdematous; therefore mere distension with no obvious pathological abnormality can rarely be considered an indication for cholecystotomy. The above figures indicate that the most favourable results are obtained by mere drainage of the peritoneal cavity. In most cases where this was the only operative procedure, evidence of cholecystitis was absent, and hence there was no indication for further interference.

One striking feature of these results is the poor prognosis in cases in which the pancreas was incised and drained. This is probably due to several reasons, of which may be mentioned: (1) incision of the pancreas favours local hæmorrhage and adds trauma to infection; (2) non-infected areas in the pancreas are exposed to infection, hence infection tends to become more widespread; (3) injury of the pancreatico-duodenal arteries may occur, interfering with the blood-supply of the duodenum, and cases of duodenal fistulæ have been reported after this procedure. Hence it appears that in the light of our present knowledge the line of treatment commonly indicated is peritoneal drainage, the peritoneum over the pancreas being first incised, it being advisable to bring the drainage-tube out through a separate puncture rather than through the laparotomy wound, owing to risk of the wound breaking down as a result of the action of pancreatic enzymes.

Suprapubic drainage may reasonably be added in cases of widespread infection. If gall-stones or other evidences of cholecystitis are present, then cholecystotomy should be combined with the above if the general and local conditions are satisfactory.

Recently it has been advised to secure retro-peritoneal drainage of the pancreas by means of a subcostal incision in the left loin, which has the advantage of obviating the risk of peritoneal infection by manipulation and drainage-tubes. This line of treatment is supported by the above statistics, which suggest that in the absence of a diseased gall-bladder, peritoneal drainage gives good results; therefore, if the patient is sufficiently fit, and the gall-bladder appears to be healthy, the ideal treatment would appear to be closure of the laparotomy wound and the establishment of retroperitoneal drainage.

After-treatment.

Owing to the well-known effect of pancreatic discharges on tissues with which they come in contact, immediate protection should be afforded to the wound by means of some mineral fat. The puncture wound for the drainage-tube should be kept separate from the laparotomy wound. In two cases of this series re-suture of the laparotomy wound was necessary, and in other cases it was noticed during convalescence that the wound bulged, ventral herniæ subsequently developed. As a result of the general infection of the pancreas, and consequent alimentary disturbances, pancreatised food or some form of artificial pancreatic secretion should be administered as long as necessary.

Although uncommon, glycosuria occasionally persists after an attack of acute pancreatitis, in one case amounting to 2·5 per cent. one month after operation. Possibly chronic pancreatitis had previously depressed the islands of Langerhan's and predisposed to acute infection. Hence, possibility of glycosuria as a sequelæ should be borne in mind, and, if necessary, suitable medical régime instituted.

After-results.

It has already been indicated that this condition is one which tends to be recurrent and frequently progressive, the subsequent attacks commonly increasing in severity. In the case previously outlined the fourth definite attack was fatal, and in cases which recover with surgical assistance one would expect to find that, as the cause of the condition is incompletely understood, and, therefore, presumably continues, recurrences are likely to occur.

In one case of the series a recurrent attack occurred while a patient was still in bed, 22 days after cholecystotomy had been performed. The pain had been so severe that morphia was necessary. Reference has already been made to a case which returned from convalescent home with a further and fatal attack of acute pancreatitis.

Twenty-eight cases with at least one year's interval after operation have been traced, and evidence obtained regarding their after-history. Of 25 conclusive histories, no less than 16 suffered from subsequent attacks. Obviously the same fallacy exists in obtaining information regarding previous attacks, in that the patient may mistake pancreatic pain for pain of other origin. This danger was recognised and obviated as far as possible, and the characteristics of pancreatic pain are such that once actually experienced its subsequent recognition is probable. Again, in two cases in which cholecystectomy was performed typical attacks of pancreatic pain recurred, and in these cases pain due to cholecystitis or gall-stones were excluded.

Summarising the after-histories we obtained the following results:—

	Gall-stones Present.	*Absent.*
Recurrent attacks	13	3
No recurrent attacks	3	6
Inconclusive	2	1

The above figures are merely sufficient to suggest one or two features, perhaps the most striking is that the majority of cases of acute pancreatitis tend to relapse, and subsequent attacks are to be expected. Also the risk of these subsequent attacks appears to be greater when associated with cholecystitis as indicated by the presence of gall-stones, suggesting that when once pancreatitis infection is established infection of the biliary passages predisposes to reinfection of the pancreas.

Summary.

(1) Acute pancreatitis is a progressive condition, less severe attacks are frequently unrecognised, but the condition tends to culminate in an abdominal catastrophe.

(2) Drainage of the pancreatic region appears to be the essential line of treatment if pathological condition of the gall-bladder are present, then cholecystotomy may be performed as well. In suitable cases retroperitoneal drainage would be expected to give good results. Incision and drainage of the pancreas is not to be recommended.

(3) Immediate care should be taken to protect the wound after operation, and drainage-tubes should be inserted through special puncture wounds.

(4) Recurrence of attacks is to be expected, particularly when pathological conditions of the gall-bladder are present.

In conclusion, I must thank various members of the staff of the London Hospital for permission to include among statistics cases under their charge.

ULTRA-VIOLET RADIATION IN CŒLIAC DISEASE.*

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LITTLE of clinical value has been hitherto added to the original description of cœliac disease by Gee in 1888. The essentials of the following case may best be shown by reference to the weight chart here given and to the details of the condition present in July, 1923.

At the age of 6 years the child weighed 29 lb. only—i.e., the equivalent of a child of 2 years. Her height was 41 in., and body-height 22½ in.

Absence of organic disease, an abdomen enlarged to a circumference of 20 in., a clean tongue and capricious appetite, five or six whitish fatty stools daily containing 46 per cent. of total fat of the dried material, and its onset at the age of 3 years established the diagnosis of cœliac disease, the child having been born at full term, 7 lb. in weight, and subsequently breast fed for ten months.

Subsequently attacks of colic, vomiting, and diarrhœa occurred, and an anæmia in January, 1925 (R.B.C., 3,500,000, Hb 70 per cent., and C.I. = 1), was demonstrated.

Apparently the disease is very seldom fatal, and the symptoms pass off during the later years of childhood, growth occurring to fair stature with freedom from symptoms on an ordinary diet.

Types of the Disease.

Two types of the disease are described: (1) The diarrhœic, where the stool resembles that of sprue, large, pale, and offensive, with fat as fatty acid. (2) Non-diarrhœic, where the stool is formed, coloured, and not offensive, with fat chiefly in form of soaps.

Post-mortems of other cases show no wasting of the intestinal mucous membranes or of Leiberkühn's follicles, and no ulceration, and usually the liver is normal in size or slightly enlarged, and the pancreas normal.

Theories of Causation.

Various theories of origin are cited. Against that of enteritis is the absence of intestinal ulceration, and against that of pancreatic deficiency, the following facts: 1. Fat splitting may be detected in fæces, up to 80 per cent. of total fat. 2. No muscle-fibres can be found in the stools. 3. Loewi's sign is negative. 4. No changes are found in the gland at post-mortem.

As regards urinary diastase, this on April 19th, 1925, was 4 units only (the normal being 10–20 units), and again on April 2nd, 1926, one year later, 5 units. In this particular case, however, the fat estimation would suggest a pancreatic deficiency, since the great part of the total fat remained unsplit into glycerine and fatty acids.

—	September, 1923.	November, 1924.	October, 1925.	April, 1926.
	%	%	%	%
Total fat	46	23	59·64	21·37
Split fat	6	10	48·7	17·81
Unsplit fat	40	13	10·94	3·56

It will, however, be noticed that whereas in October, 1925, the majority of the fat was being split, yet the child was persistently losing weight, which is strongly suggestive that the condition was one of an inability to absorb fat, rather than of a pancreatic deficiency.

In support of his theory of a "Defective Excretion of Bile Salts," Dr. Reginald Miller[1] has declared that "cœliac disease is a digestive fault and not an organic disease. Of the glands concerned in fat digestion, the *liver* seems under chief suspicion." And again—

"We know that the disorder is not due to a persistent inhibition of the bile flow, but speaking for myself only, I think it not unlikely to be due to some abnormality in bile salts secretion. . . . I give courses of bile salts, which in many cases lead to an increased absorption of fat."

* A paper read before the Devon and Exeter Medico-Chirurgical Society.

Course and Treatment of the Case.

In this case sod. glycocholate, gr. i., t.d.s., were administered in January, 1924, without any advantage, but from February to June, 1925, Parke, Davis and Co.'s "bile salts (gr. ½) and pancreatin (gr. iii.)," with sod. bicarb. (gr. xxx.), t.d.s., apparently proved beneficial until an epidemic catarrhal jaundice threw her back materially. Unfortunately, at this time it was impossible to make any investigation of liver efficiency.

Since 1913 Rowntree, Hurwitz, and Blomfield,[2] and later Sabatim,[3] Aaron, Beck and Schneider,[4] and Piersol and Bochus[5] in America, have been advocating hepatic efficiency tests by the use of phenoltetrachlorphthalein (or bromsulphalein), salts now used in the X raying of the gall-bladder. But, unfortunately, this would have necessitated the withdrawal of 8 c.cm. of blood from the child's vein and the injection of 20 c.cm. to 30 c.cm. of diluted dye washed in with a further 25 c.cm. of saline. Assistance was therefore sought from the *lævulose test.* This showed an increase at one hour of 25 mg., which, according to Spence and Brett[6] and de Wesselow,[7] might be evidence of diminished liver function. But this rise was not sustained, nor did lævulose appear in the urine.

The patient was given breakfast at 5.30 A.M., consisting of dried toast and a poached egg, and the test was commenced at 11 A.M. on April 2nd, 1925.

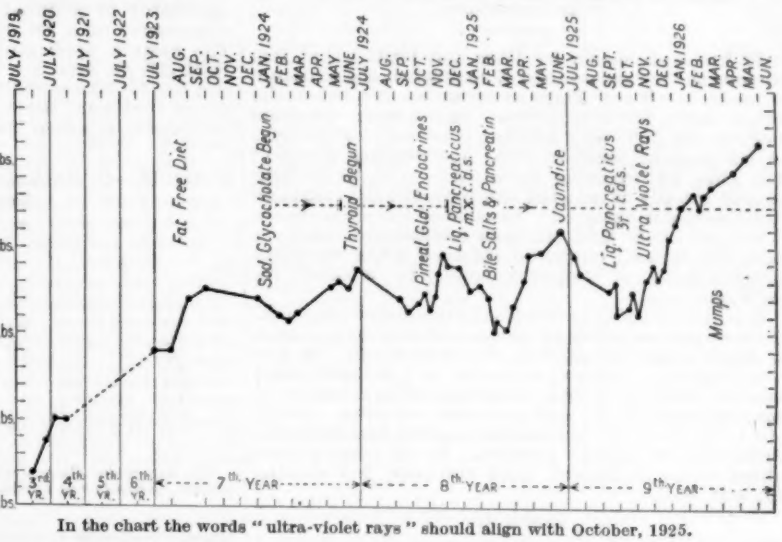
Blood.	*Urine.*
Before lævulose = 0·15 per cent.	Before lævulose—no reduction of Fehling's solution.
30 gm. lævulose given— ½ hour after = 0·137 % 1 „ „ = 0·175 % 1½ hours „ = 0·153 % 2 „ „ = 0·146 %	No reduction of Fehling's solution in any of the specimens.

Therefore, because this lævulose test was indecisive and there was no marked improvement by giving bile salts, I personally think that the liver is not to blame. Nor is there in my opinion any endocrinal disturbance. Thyroid was harmful, and Carnrick's pineal gland comp., containing ant. pit., gr. $^1/_8$; thyroid, gr. $^1/_8$; adrenalin, gr. 1; ovarian, gr. $1^1/_2$; pineal, gr. $^1/_3$, produced a transitory improvement but no more.

Before passing further I should like to lay stress on the capriciousness of the child's appetite. It has been written that the keynote of treatment is the diminution of the fat intake, and that thereby a wasted ailing being can be turned into a contented chubby child. But this was more easily ordered than enforced.

In December, 1923, there was severe anorexia, with refusal of all cooked meats. Again in February, 1924, she was so difficult to feed that all diet restrictions had to be withdrawn. Her tastes were for dry biscuits, greens, pickled onions, apple jam, butter and potatoes, milk and potatoes, liver and eggs, but no meat. Later in September, 1925, she would not eat "cooked" dinner, but only sausages, and 1½ pints of milk, with bread and butter. No eggs, meat, or fish. She preferred a dry biscuit. In view of this anorexia for protein, it was difficult to exclude fats entirely.

In cœliac disease there is said to be a deficiency of calcium in the blood, and tetany and late rickets may complicate it. Other observers have reported the ineffectiveness of treatment with calcium and parathyroid. Ultra-violet radiation, however, increases blood calcium. Moreover, Dr. Leonard Parsons[8] discusses the "value of irradiated cholesterol in rickets," and cites various workers and their theories for the changes produced in the cholesterol or the animal. For example, Drummond contends that the "growth vitamin" fat-soluble A is synthesised in the cholesterol, Rosenheim and Webster that the animal's own vitamin is "mobilised," and again Nelson and Steenbock that the light has increased



In the chart the words "ultra-violet rays" should align with October, 1925.

But this rise was not sustained, nor did lævulose appear in the urine.

The patient was given breakfast at 5.30 A.M., consisting of dried toast and a poached egg, and the test was commenced at 11 A.M. on April 2nd, 1925.

Whatever occurs ultra-violet radiation was of definite value in this particular case. Treatment was commenced on Oct. 24th, 1925, from which date the child persistently gained in weight and physique. The continuation notes are appended.

24/10/25: Ultra-violet ray daily for a week, and then three times weekly under a mercury-vapour lamp.

20/11/25: Not disturbed at night for last two weeks. Bowels open, 1 per diem. Eating well (oatmeal, bread and butter, milk + +).

4/12/25: No diarrhœa or vomiting for two weeks.

8/1/26: Height, 41½ in.; body-height, 23 in.; circumference of head, 18¾ in. No chilblains for first time. Taking cream.

14/3/26: Mumps—without set-back.

12/4/26: Urinary diastase = 5 units. Blood count = R.B.C., 5,300,000 per c.mm.; Hb, 70 per cent.; C.I., 0·7; leucocytes, 6200.

16/4/24: Height, 42½ in.; body-height, 23½ in.; circumference of head, 19 in. "She goes and helps herself to the milk." Potatoes and butter, jam + +, oranges, apples, bananas.

I think, therefore, I am justified in this case in concluding that *post hoc* is *propter hoc.* It is extremely regrettable that the blood calcium was not estimated in this case. As an explanation, however, I would submit these two theories: 1. The ultra-violet rays have proved beneficial by improving the calcium metabolism in some way, rendering the fats more readily assimilable as soap by the lacteals. 2. That the rays develop in the child's tissues a vitamin which renders the fat capable of absorption. For, whereas she refused milk in any quantity, the source of fat-soluble A, now she does not seem to be able to drink and eat enough milk and butter, of which she daily consumes three quarts and half a pound respectively.

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THE EFFECT OF β RADIATION ON ROUS CHICKEN TUMOUR.

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IT has been shown by Russ and Scott [1] that this tumour is very resistant to X rays when the exposure is made in vitro. They gave up to five times the lethal dose for rat, mouse, and human tumours without in any way altering the rate of growth. In contrast to these in vitro observations Peyron [2] was able, by exposing tumours in vivo, to prolong greatly the life of infected chickens, though complete cures were not obtained. In view of Peyron's results it seemed likely that chickens resistant to infection with this tumour might be obtained if the complete disappearance of tumours could be effected by radiation.

In order to obtain superficial tumours which could be effectively radiated, application of tumour emulsion to small areas of scarified skin was tried. It was found that when tumour emulsion, or 1 in 100 clarified tumour emulsion (Seitz clarifying filter) was used tumours resulted in 100 per cent. of cases. With 1 in 100 germ-free emulsion (Seitz germ-free filter) the result was not always positive. In all cases a pure inbred strain of Barred Rock chickens, 2–3 months old, was used.

TABLE I.

No.	Days.	Experiment.	Result.
1	0	T. E. to Sc. right side.	+ 7th day.
	7	Radiation 1 hr., applic. No. 4	Disap. 25th day.
	19	T. E. to Sc. right side.	Negative.
	34	T. E. to Sc. left side.	,,
2	0	T. E. to Sc. right side.	+ 8th day.
	10	Operation tumour removed.	Recurred 27th day.
	27	Radium to recurrence ¾ hr., applic. No. 57.	Disap. 48th day.
	49	T. E. to Sc. left side.	Negative.
	62	T. E. to Sc. right side.	,,
3	0	T. E. to Sc. right side.	+ 5th day.
	4	Radiation 1¼ hrs., applic. No. 4.	Disap. 14th day.
	12	T. E. to Sc. right side.	Negative.
	25	E. T. to Sc. left side.	,,
4	0	T. E. to Sc. left side.	+ 6th day.
	10	Radiation 2 hrs., applic. No. 4.	Disap. 20th day.
	21	T. E. to Sc. left side.	Negative.
	38	T. E. to Sc. right side.	,,
5	0	T. E. to Sc. right side.	+ 7th day.
	7	Radiation 1½ hrs., applic. No. 4.	Disap. 14th day.
	19	T. E. to Sc. left side.	Negative.
6	0	T. E. to Sc. left side.	+ 10th day.
	11	Radiation 2 hrs., applic. No. 4.	Disap. 17th day.
	21	T. E. to Sc. left side.	Negative.
	32	T. E. to Sc. left side.	,,
7	0	T. E. to Sc. right side.	+ 8th day.
	13	Operation, tumour removed.	Recurred 23rd day.
	23	Radium to recurrence 1 hr., applic. No. 4.	Disap. 35th day.
	49	T. E. to Sc. left side.	Negative.
	71	T. E. to Sc. right side.	,,
8	0	T. E. to Sc. right side.	+ 12th day.
	12	Radiation 2 hrs., applic. No. 4.	Disap. 42nd day.
	42	T. E. to Sc. left side.	Negative.
	60	T. E. to Sc. left side.	,,

T. E. = Tumour emulsion. Sc. = Scarified.
Disap. = Disappeared.

As a preliminary the effect of removing the tumour by operation was tried, as by this means, apart from radiation, a condition of immunity might follow the temporary growth of the tumour. It was found that the removal of a tumour by operation does not render the chicken resistant. The effect of radiating the cutaneous tumours was next tried. The results are given in Table I. It is seen that β radiation causes the disappearance of the tumours, the dose required being not much greater than that required to cause the disappearance of Jensen's rat sarcoma. For instance, an exposure of 40 minutes to the No. 4 applicator is required to cause the complete disappearance of a rat sarcoma measuring 5 × 5 mm. The radium applicators used were No. 4, 110 mg. $RaBr_2 4H_2O$, area 2 × 2 cm., screen 0·12 mm. silver and No. 57, 20 mg. radium element, area 15 × 15 mm. screen 0·35 mm. silver. The growth of the radiated tumours is given in Table II. Apart from radiation these cutaneous tumours have not been observed to disappear; they grow rapidly, spread to the subcutaneous tissues, and lead to metastases in the viscera. These animals, in which tumours had disappeared following radiation, were rescarified twice with negative result, controls being positive in each case.

TABLE II.—*Of Animals in which Tumour Disappeared (see Table I.).*

No.	Days—									
	0	3	7	10	14	17	21	24	28	31
1	8/5	6/4	5/3	4/4	4/4	Nil	—	—	—	—
2	6/5	11/7	12/7	11/7	10/8	6/4	Nil	—	—	—
3	5/5	5/5	4/3	Nil	—	—	—	—	—	—
4	6/5	3/3	2/2	Nil	—	—	—	—	—	—
5	12/5	4/4	Nil	—	—	—	—	—	—	—
6	4/3	3/3	Nil	—	—	—	—	—	—	—
7	15/9	21/11	23/11	25/14	27/16	25/16	23/16	21/12	16/7	Nil
8	11/6	11/9	12/9	9/8	9/8	10/8	9/8	9/8	4/4	Nil

The superficial dimensions of the tumours are given in millimetres. Radium was applied in each case after the first reading.

Discussion.

The great difference in sensibility to radiation according to whether it is radiated in vitro or in vivo has not been recorded for any other tumour. The resistance to radiation in vitro is probably associated with the fact that this tumour can be propagated by cell-free filtrates. Sections of radiated tumours show that the tumour cells are destroyed in the usual manner, but why the infective agent which is presumably not destroyed by the radiation does not infect the surrounding tissues is unknown. The question as to whether after radiation in vivo the tumour loses its power to infect by a cell-free filtrate cannot as yet be answered. In these experiments three tumours were used, one from Dr. Gye and two from Dr. McIntosh, all of which gave rise to tumours with cell-free filtrates. Further, they were from time to time tested to ensure that they had not lost this property. It may thus be concluded that though a tumour in a patient be easily destroyed by β radiation, it may nevertheless be of a kind which could be propagated by a cell-free filtrate; the effect of radiation in vivo on it is no criterion.

Conclusions.

1. Rous chicken tumours capable of infecting by cell-free filtrates can be destroyed by β radiation.

2. The dose acquired is not very different from the dose required to destroy mouse and rat tumours, and is very much less than that required to destroy Rous tumour by means of X rays applied in vitro.

3. Chickens in which tumours have been made to disappear by β radiation exhibit resistance to subsequent infection.

This research was carried out under a grant made by the British Empire Cancer Campaign. Some of the radium used was on loan from the Medical Research Council.

[1] Russ and Scott: THE LANCET, August 21st, p. 374.
[2] Peyron: Comp. Rend. Soc. Biol., Paris, 1923, clxxvii., 1341.

Clinical and Laboratory Notes.

ALKALOSIS.

TREATMENT BY AMMONIUM CHLORIDE PER RECTUM AND CONCENTRATED SODIUM CHLORIDE INTRAVENOUSLY.

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IN THE LANCET of Oct. 16th, 1926, in an article on Before and After Operation, by Sir Berkeley Moynihan, the subject of alkalosis is dealt with, and the treatment suggested is that of intravenous injection of normal saline, repeated if necessary, and the administration of dilute hydrochloric acid by the mouth.

The line of treatment indicated by the heading of this article is one which I have been using for over a year now in all cases of intestinal obstruction with very successful results. It consists of the administration of 3 drachms of ammonium chloride in 5 or 6 oz. of water per rectum just before operation; and of the administration of 10 oz. of a 15 per cent. solution of sodium chloride intravenously as soon as the patient is put under the anæsthetic. The stomach is, of course, always washed out previous to administration of the anæsthetic. Even after prolonged intra-abdominal manipulations the patients usually go off the table with most satisfactory pulse, and at one's visit next day a word that generally comes from their lips, on being asked how they feel, is "champion."

The rationale of the treatment appears to be that there is such a loss of HCl to the system by vomiting that the chlorides are seriously depleted, and require replenishing. This is supplied by both the salts used, but the ammonium may have some further beneficial action on the liver chemistry. As regards the use of so concentrated a solution of sodium chloride, it may be that its beneficent action is in part due to it being so concentrated, and so preventing an exosmosis of plasma salts into the intestinal tract, much the same as hypertonic saline acts so beneficially in the treatment of cholera.

The only drawbacks to this line of treatment are: (*a*) marked thirst, which, however, helps in flushing the system with plenty of fluid; (*b*) sometimes anuria may be accompanied by severe diarrhœa, but which are not of long duration; (*c*) thrombosis of vein used for the injection. This does not seem to cause any trouble.

Two recent cases, both of severe intestinal obstruction from abdominal tuberculosis, will serve to illustrate its use.

Clinical Records.

CASE 1.—Male, aged 30, admitted to hospital with pain over appendix area, vomiting, and signs of obstruction. Treatment as above given. Stomach washed out (contents being large amounts of brown offensive fluid). Operation revealed extensive abdominal tuberculosis, most marked in the ileo-cæcal region, but with adhesions involving most of the neighbouring coils. The bowel already looked purplish, and the adhesive bands in this area were sloughing. A cæcostomy was done, as the condition of the patient did not allow of anything further, and the outlook was not hopeful. Afterwards the patient's condition improved considerably, and his cæcostomy acted, while his colon was relieved by enemata. Some 10 to 14 days after, the cæcostomy refused to operate, gentle irrigation refused to bring anything away, and the patient began to complain of more pain. There was no vomiting, however, until after administering of 5 grains of calomel without its having any effect via the cæcostomy. It was decided to reopen the abdomen. After preliminary washing out of stomach, giving of ammonium chloride and concentrated sodium chloride, the abdomen was opened, and the collapsed small bowel was traced up to where another band strangled the bowel. Above this the small gut was dilated to the size of a dilated colon, was full of fluid, and quite inert. The bands were cut, the fluid milked down the gut, and a jejunostomy performed. Sterile paraffin was passed over the raw surfaces left from breaking down of adhesions. Next day the patient was in wonderful condition, his only complaint being of great thirst. The jejunostomy drained away pints of dark brown fluid for days, and was used to feed him with 0·5 per cent. sodii bicarb. solution and 5 per cent. glucose. It was some days before the cæcostomy acted again, and only after the continued use of pituitary and eserine. Thereafter convalescence was uninterrupted.

CASE 2 was that of a man, aged 25, admitted to hospital with signs of intestinal obstruction. His previous history was to the effect that he had undergone two abdominal operations for obstructive symptoms, when bands were found and enlarged glands noted. The last of these was three years ago, since when he had kept quite well. His face was very pinched, and he complained of a great deal of abdominal pain. The same routine was observed; stomach washed out, am. chlor. and concentrated NaCl given. On opening the abdomen very extensive adhesions were found all over, particularly on the right side of the abdomen, where one band was kinking the bowel very tightly. It seemed hopeless to try to deal with all the adhesions and cover all the raw surfaces left. A jejunostomy was done, sterile paraffin passed all over the raw surfaces, and a drainage-tube lodged suprapubically. The jejunostomy was to be used to wash out the upper tract four hourly with 0·5 per cent. sodii bicarb. solution. Next day the patient felt "champion," and had a splendid pulse. It was noticed, however, that each time he was washed out or had a glucose feed with sodii bicarb. he was sick, bringing up bilious material. Thinking this might be some remains of the alkalosis, I advised the use of saline and glucose, after which there was no more sickness, and progress was uninterrupted.

The use of normal saline and glucose intravenously seems to find a very useful sphere in the allied condition of intussusception.

A NOTE ON THE BACTERIAL CONTENT OF ICE-CREAM.

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THIRTY-FIVE samples of ice-cream, taken from various sources and exposed for sale in London, were examined in the hot period between July 16th and August 16th this year. The investigation was limited, and was undertaken only to obtain a general idea of bacterial contamination with reference to the number of organisms and the presence of coliform organisms, *B. enteritidis sporogenes* and streptococci.

Bacterial Count.—The number of colonies growing on agar at 37° C. for 24 hours:—

2	samples showed	under a million per c.cm.
6	" "	between 1 and 10 million per c.cm.
9	" "	" 10 " 50 " " "
3	" "	" 50 " 100 " " "
10	" "	" 100 " 1000 " " "
5	" "	over 1000 million per c.cm.

(2 of these were uncountable in a one-millionth dilution.)

Coliform Organisms.—The minimal amount showing the presence of acid and gas in litmus bile-salt lactose broth in 24 hours at 37° C.:—

4	samples showed	acid and gas in 1 c.cm.
8	" "	" " " 0·01 c.cm.
9	" "	" " " 0·0001 c.cm.
2	" "	" " " 0·00001 c.cm.
11	" "	" " " 0·000001 c.cm.

1 sample showed no acid or gas in 1 c.cm. or less amount.

B. enteritidis sporogenes.—Minimal amount showing acid and torn clot in litmus milk. The ice-cream was heated to 80° C. for ten minutes and cultures grown anaerobically for three days at 37° C.:—

6	samples gave	positive results in 1 c.cm.
2	" "	" " " 0·1 c.cm.
6	" "	" " " 0·01 c.cm.
3	" "	" " " 0·001 c.cm.
1	sample "	" " " 0·0001 c.cm.
17	samples "	" " " 0·00001 c.cm.

(Dilutions were not taken higher than 1/100,000.)

Streptococci were found to be present in 1 c.cm. of 26 samples; 9 of these were of a long-chained variety.

It should be stated that the samples were put up for culture within an hour of collection, but were not transmitted in ice; but even allowing for this, the figures appear to be excessive for a food fit to be consumed. The United States Department of Agriculture Bureau gives as an average a bacterial count of 38 millions per c.cm. in the summer months.

Of this series, 33 (two being uncountable) gave an average of 969 million per c.cm. It was noted that the two samples giving the lowest counts, which were 200,000 and 600,000, were wrapped in paper, and that those with the highest were from the street barrow, where the ice-cream tub has the greatest exposure to street dust, and the large spoon is usually kept in "clean" water. Presumably the ice-creams of this series were consumed by many London children, yet no epidemic of food poisoning actually attributed to ice-cream seems to have been reported during that period; so that these ice-creams, many of them practically bacterial cultures, were eaten without any apparent ill-results from a public health point of view.

Probably none of these organisms are directly pathogenic in the healthy alimentary tract of a child of school age, or possibly children early acquire a high degree of immunity to such as *B. enteritidis sporogenes;* but it must be admitted that the chance of virulent types of organisms—e.g., a virulent type of *B. coli*—obtaining access to ice-cream is great. Similarly, organisms of the Gaertner Salmonella group, from dust and flies, &c., may possibly occur in ice-creams sold from open receptacles in the street.

It appears to be worth while considering (apart from acute food poisoning) whether or not contaminated foods taken in childhood sometimes permanently alter the normal intestinal flora so as to lead to alteration of intestinal digestion and absorption, resulting in later life in puzzling toxæmias and diatheses.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

COMBINED SECTIONS OF OTOLOGY, MEDICINE, AND NEUROLOGY.

BLOOD PRESSURE AND EAR DISEASE.

AT a meeting held on Dec. 3rd Dr. DAN MCKENZIE (Otology) took the chair, and a discussion on the relation of abnormalities of the blood pressure to diseases of the ear was opened by the reading of a paper by Sir WILLIAM MILLIGAN (Otology). The vascular supply of the internal ear, he said, formed a closed circulation, the blood being carried away by means of three veins. A study of these vascular arrangements showed that one segment of the auditory scale could be put out of action—e.g., from embolism or atheroma—without other segments being involved. The full brunt of a pathological storm was liable to occur in the cochlea or the vestibulo-canalicular systems, or both. The auditory was the most sensitive of all the cranial nerves, and hence it very readily responded to variations of arterial pressure unaccompanied by any organic lesion. There was, however, in the matter of blood pressure a wide range of normality. A patient frequently came to the aurist because of some local disturbance such as tinnitus, which might be due not to the ear but to a general circulatory upset. This symptom might result from a blood pressure either higher or lower than normal, and it was generally bilateral. But it might be due to a local organic lesion of the ear, and then would most likely be unilateral. In such cases he advocated a closer coöperation between aurist and physician. A rushing tinnitus might be the first danger-signal of high pressure. Many transient vertiginous attacks in persons with high blood pressure were due, he thought, to arterial spasm, causing labyrinthine anæmia. In the rare condition of true Ménière's disease both the static and the acoustic segments of the ear were to some extent disorganised. But there might be a vestibular symptom-complex without loss of hearing, the so-called pseudo-Ménière's disease, a term he would gladly see abolished. Attacks of the kind under discussion were frequently induced by worry and hurry, often accompanied by over-indulgence in tobacco. Repeated vertiginous attacks of labyrinthine type coming on after sudden head movements and unaccompanied by deafness were frequently the forerunners of fatal angina pectoris. Subnormal arterial pressure, such as in severe anæmia, neurasthenia, phthisis, influenza, and diphtheria might result in temporary loss of hearing, tinnitus, and vertigo, owing to venous stasis in the internal ear. Primary disease of the internal ear was comparatively rare. After excluding suppurative conditions, when the clinical symptoms suggested disease of the internal ear, a detailed examination of heart, kidneys, and intestinal tract should be made, and the blood pressure measured. Tinnitus and vertigo were, in many cases, danger warnings of organic disease in regions remote from the ear.

Dr. LEWIS A. SMITH (Medicine) said there seemed to be a large range of blood pressure which was consistent with the performance of very good work, for people with a systolic pressure of 180, or even 200, carried on very efficiently. Folk complaining of deafness did not consult the general physician, but those having vertigo frequently did. Analysing 50 cases among his own patients, with a systolic pressure of 200, he found that only 10 complained of vertigo or giddiness, though they confessed to abnormal feelings in the head. Among 20 adult people with low pressure (100 to 110 systolic) only four complained of vertigo or giddiness. Most of those who did complain of vertigo showed great differences between the systolic and the diastolic pressures. Sometimes a complex cause was at work, as in a recent case of his own, in which there were very hard arteries; 1½ oz. of strong tobacco was being smoked daily, and definite albuminuria was present. Taking 50 patients who complained of vertigo, 15 were neurasthenics, 13 had cardio-vascular troubles, 8 indulged in tobacco (notably cigarettes) to excess; gastro-intestinal cases numbered 6, in 4 the vertigo was aural in origin, in 2 there was epilepsy, and gross anæmia was present in 2. In 37 of these 50 the blood pressure was normal. Blistering over the mastoids, with bromides and luminal internally, proved helpful in relieving the vertigo.

Dr. W. J. ADIE (Neurology) took the view (partly, he said, to provoke discussion) that there was no direct relation between abnormalities of the blood pressure and ear disease. Vertigo as a symptom, apart from ear disease, could be dismissed at once, as it accompanied so many conditions. But he did not agree with the statement in a well-known text-book that tinnitus did not occur in association with central lesions. He had never seen or heard of a case in which a central lesion produced deafness. The only certain symptom of ear disease, he contended, was deafness. Patients with high blood pressure often had small strokes, from which they recovered, but these were not caused by the high pressure; they resulted from narrowing or thrombosis of cerebral vessels, as a result of associated arterial changes. There was too much readiness, he thought, to correlate the state of the blood pressure with certain symptoms. Degenerative changes in the ear might occur coincidently with sclerotic processes in other organs, or they might be secondary to arterial disease.

Discussion.

Mr. G. J. JENKINS also expressed his difficulty in arriving at a proper criterion of normal blood pressure. When the pressure of a person was very high his efficiency might be good, though his life might be in danger. The auditory and vestibular symptoms and signs might be only part of the manifestations of unusual blood pressure, whether high or low. In the case of people with arterio-sclerosis, the taking of a hot bath would often cause tinnitus, vertigo, vomiting, and headache of severe degree. It was not possible to determine whether the lesion was labyrinthine or intracranial. He did not think that even a very high systolic pressure would produce

ear symptoms; there was a class of cases in which the blood pressure was continuously high to compensate for the diseased condition of the vessels. Often there was also evidence of disease of the labyrinth. When deafness, tinnitus, and vertigo were severe, nearly always one labyrinth was more affected than the other.

Dr. J. A. RYLE spoke of the need for distinguishing between giddiness or dizziness and genuine vertigo. Of 90 of his patients with high blood pressure only 4 had genuine vertigo, with nausea, instability, and the sensation of objects revolving. Of 18 cases of real vertigo, 11 had normal or subnormal pressure, 7 had high pressure for their age. Four of these last seven had also unilateral deafness or tinnitus, which suggested the existence of local changes.

Mr. A. R. TWEEDIE thought it well to remember that, in regard to its static properties, the human ear was a degenerating apparatus, certainly compared with that of the dog; people were constantly engaged in disregarding noises which interfered with work or comfort. Vertigo did not owe its occurrence to one uniform cause: it arose from a conspiracy of causes—fatigue, vasomotor disturbance, neurasthenia, aural asymmetry.

The discussion was continued by Dr. SALISBURY SHARPE, Dr. A. ABRAHAMS, Sir JAMES DUNDAS-GRANT, Mr. E. B. BARNES, Mr. E. WATSON-WILLIAMS, and the PRESIDENT. Dr. SMITH briefly replied.

SECTION OF ORTHOPÆDICS.

AT a meeting of this Section held on Dec. 7th Dr. W. GORDON PUGH, the President, took the chair, and Mr. S. L. HIGGS opened a discussion on the treatment and results of

Fractures of the Upper End of the Femur in Adults.

Fractures of the shaft were excluded from the scope of the discussion. Most attention, said Mr. Higgs, would doubtless be given to fractures of the femoral neck, as this accident not only endangered life but was likely to lead to severe crippling Older writers considered that treatment of these cases was almost hopeless, and that non-union was inevitable unless impaction had taken place at the time of the injury. The recent literature on the treatment was mainly American and continental. Mr. Higgs felt sure that the present routine methods of treatment were very unsatisfactory. He submitted that there were five types: (1) subcapital, (2) transcervical, (3) intertrochanteric, (4) pertrochanteric, and (5) subtrochanteric. The first two were fractures of the neck proper, and therefore always passed into the joint. The subjects were mostly old people, and the accident was the result of indirect violence, but cases were seen at all ages. Usually the fracture was not comminuted, and only loosely, if at all, impacted; its manipulative reduction was fairly easy. Commonly a painful pseudarthrosis was left. The other types (3, 4, and 5) might involve the neck of the femur, but only at the base; the sufferers were generally younger people, and direct violence was the cause. Comminution was the rule, and impaction was common. Firm bony union was the usual sequel.

It was the results of treatment of the cases of fracture of the neck proper which were so unsatisfactory, continued Mr. Higgs. Among factors which predisposed to non-union were structural changes in bone associated with old age, interruption of the vascular supply, the presence of synovial fluid, lack of apposition of the fractured surfaces, and difficulty in immobilisation. In assessing the value of various methods of treatment used for this type of fracture, he gave a word of praise to Whitman's method of abduction and fixation in plaster. Extension, wide abduction, and internal rotation reduced the deformity and brought the bony surfaces into contact. The bone had united in five of his cases treated by this method.

Operations devised for treating ununited fractures of the femoral neck came, he said, under two heads: (1) those undertaken to promote union of the fracture, (2) those in which the mechanism of the joint was reconstructed. These Mr. Higgs discussed in considerable detail. His paper ended with the following general conclusions: (1) Fractures of the upper end of the femur, excluding those of the neck proper, readily united, and ordinary extension methods, as in fractures of the shaft, were satisfactory. (2) Fractures of the neck of the femur must be treated on quite different lines to get good results. It was useless to employ the usual extension methods in these cases. Wide abduction, with fixation in plaster, should be used as a routine. Most cases so treated resulted in firm union, whatever the patient's age. The additional fixation given by inserting a bone-graft might, he thought, lead to more good results, but the operation was too highly specialised to be used generally. (3) For ununited fractures of the femoral neck operative treatment was advisable if the general condition of the patient was such as to permit of it. The kind of operation would depend on the degree of absorption of the neck and the condition of the articular surfaces. Refreshing the fractured surfaces, either with or without the insertion of a bone-graft, was indicated in cases in which the restoration of the anatomy of the hip-joint was a practical proposition. In other cases reconstructive operations would restore stability to the joint and relieve the pain.

Discussion.

Mr. E. W. HEY GROVES said that surgeons were agreed on the general principles governing the treatment of these cases, but a large proportion of bad results occurred in the practice of those who were not specially interested in the treatment of fractures, or who chose to leave such cases alone, hoping either to forget them or that they would be lost sight of. Among the causes of non-union he thought that Mr. Higgs did not lay sufficient stress on interposition of the capsule. In perhaps three-fourths of the cases he had seen there was a definite interposition of fibrous tissue which, he did not doubt, was derived from the reflected portions of the capsule. Though its removal was not necessary for a functionally good union, he thought that its presence militated against rapid bony union. He agreed with all that Mr. Higgs had said about the futility of the so-called extension method, which could not be too strongly condemned. He also agreed as to the enormous superiority of the Whitman abduction plaster, but even that gave 50 per cent. of poor results. It was impossible to foresee exactly which case would result in non-union until the most favourable time for treatment had passed, and he was therefore against this method being regarded as the routine one.

Mr. Groves did not agree with Mr. Higgs about bone-graft, and bone pegs, and contended that there was no advantage in bone-grafting which was not at least equalled by pegging; grafting, moreover, meant that considerably more time was taken in the operation. Pegging, he thought, should be the routine hospital treatment of fracture of the neck of the femur. In cases of subcapital fracture, where the upper fragment was very small, it was easy, by doing an anterior arthrotomy, to expose the upper fragment and dislocate it without separating it from its soft tissue connexions, and the head could be nailed into the neck. This ensured perfect apposition and the certainty of bony union. In 15 consecutive cases there had been a smooth recovery and firm bony union. In two cases there had been poor functional results, and a tendency to ankylosis in the joint, which he thought was due to atrophy of cartilage at the head of the bone; both patients were old. At what stage should a fracture of the neck of the femur be regarded as ununited? Not until 18 months or two years had elapsed was it thought necessary to adopt a different technique. If a reasonable amount of head remained, a restoration of head and neck, perhaps by a peg, was better, in his view, than any reconstructive operations.

Mr. R. C. ELMSLIE said that one surgeon never saw more than a small number of the cases under

discussion, and it was hard to gain experience of particular methods of operation. For some years it has been his practice to put on a hip-plaster with a long plaster spica, arranging for the patient to be slung by a Balkan frame. This facilitated nursing and tended to avoid bed-sores. He put a sling on either side of the pelvic part of the plaster, and attached the slings through pulleys to counter-weights. Mr. Higgs had said little about after-treatment. After an intracapsular fracture had been treated by plaster, should a calliper splint be put on for walking? He did not use a calliper splint now, as he believed that it forced the patient to walk with an abducted hip. He gave the patient walking exercises whilst lying in bed; then he got him up between two heavy chairs and encouraged him to take the strain on the affected hip by raising the pelvis on the opposite side. The wearing of a calliper splint was particularly a hardship to old and stout people.

Sir CHARTERS SYMONDS said that in the days before X rays were available he had taken a good deal of trouble in investigating the kind of cases now being discussed, and had been able to indicate two or three signs by which an extracapsular fracture could be distinguished from an intracapsular. He suggested that in extracapsular fracture of the impacted variety it was seldom necessary to do more than use a Hodgen splint and extension. In only one case of his own had it seemed wise to disimpact a fracture, and always it required great force to undo such a fracture. He had seen great advantages from the abduction method. With regard to open operation, in 1907 a boy had been brought to hospital with a fracture, and he had cut down from the front and undone the fracture with a chisel; after the leg was put up there had been a perfect functional result. He admitted, however, that this course would not always be wise. He thought the Liston splint was only a relic so far as extracapsular fractures were concerned; he did not think he had used it once during his 30 years at Guy's Hospital.

Mr. H. A. T. FAIRBANK said that he quite agreed that the results of treatment in cases of fracture of the neck of the femur were bad, and radiologists would admit they saw only few cases in which union had occurred. He thought abduction and plaster were not used in the right way. Abduction, he thought, should be left until the last, because abduction had the effect of locking the fracture, and it interfered with reduction. Internal rotation was also very important, and it should be carried out with considerable force for a long time, particularly if a long time had elapsed since the accident. He felt sceptical about any part of the capsule being nipped between the fragments, as mentioned by Mr. Groves. The decision as to operation must be influenced by the degree of atrophy of the head, and this atrophy, he held, depended on function. If there was a sufficiently sound fibrous union, or the fragments were sufficiently hitched together, so that the inner fragment performed a function when the patient began to get about again, the inner fragment was less likely to show marked atrophy. He thought an autogenous living bone-graft preferable to a peg.

Mr. W. ROWLEY BRISTOW said the figures at a large general hospital showed that the cases of true fracture of the neck of the femur admitted numbered, in 1921 and 1922 none, in 1923 two, in 1924 four, in 1925 eight, therefore it was of little use to speak of the general practitioner having had a chance of learning how to treat these fractures. He did not find any difficulty in treatment by Whitman's method, and he showed skiagrams of a case which was successfully treated by a general practitioner. Stiffness of the knee following fixation in plaster he had found to be a real trouble. When union failed at the end of 9 to 12 months the reconstructive method of Whitman seemed well worth a trial in ordinary cases; the shock was small, and it was not difficult to do.

Mr. W. MCADAM ECCLES said that there were two distinct varieties of fracture of the neck of the femur other than the subcapital and the transverse at the neck. There were cases in which the recurrent fibres of the capsule remained intact posteriorly, so that there was marked eversion, and a distinct separation of the two fragments anteriorly. But the fragments were held together with very little longitudinal displacement. By internal rotation followed by abduction and fixation, it was usually possible to ensure bony union. He questioned whether it was necessary to put the plaster as low down as below the knee. If it was put on the lower fourth of the femur passive movement of the knee was possible, and active movement later. When there was longitudinal deformity of the so-called intracapsular fracture a very serious condition resulted, and now that technique had improved he was coming to the view that this type of case would have to be treated by operation. He agreed with Mr. Groves that it was better to open a joint and see where the bone-graft or peg was going, rather than trust to the guidance afforded by X rays.

Mr. E. M. COWELL referred to the ambulance authorities' first-aid regulations requiring that these cases should be treated by extension and a Thomas splint immediately after the accident. After this the patient could be conveyed more comfortably to hospital, where he often arrived suffering very little pain.

Mr. A. H. TODD stated his opinion that the most important cause of failure to unite was lack of apposition of fragments. Reliance on a single antero-posterior radiogram of the region was a cause of much misinterpretation and therefore of mistaken treatment. The actual position of fragments in relation to each other could only be judged by stereoscopic pictures. Radiology must be regarded as an integral part of the first examination of a case. A surprising number of medical men felt they could be sure whether or not a fracture had united by a mere inspection of the radiogram. There was a good deal of erroneous teaching in regard to fractures of the neck of the femur. He used to be taught that the absorption taking place after fracture of the neck of the femur was principally that of upper fragments, whereas the absorption was in the neck, not in the head. It was now known that faulty treatment of these cases was the direct result of wrong tuition.

MANCHESTER MEDICO-CHIRURGICAL AND OBSTETRICAL SOCIETY.

A MEETING of this Society was held on Nov. 17th, when Mr. A. C. MAGIAN read a paper on

Insufflation of the Fallopian Tubes.

The method, he said, had been originally introduced by Rubin and afterwards simplified by Bonney and others. Rubin's figures for 1000 cases of sterility indicated that about 9 per cent. had been cured, but his own results had not been so good, partly, perhaps, because the cases had been more carefully selected. After many years of sterility a woman might have a child without any intervention; furthermore, the mere fact that the patient was under treatment for sterility might affect the intercourse of husband and wife. The information given to the gynæcologist was often inaccurate, and taking all these things into consideration he doubted whether insufflation could cure sterility in more than 2 per cent. of cases; in general the percentage was probably much lower. Cure could only occur where there was no more than a very fine obstruction in the Fallopian tubes. Insufflation would break down cobwebby adhesions and straighten out a slightly distorted canal, but that was all it could do with safety.

There was a good deal more to be said, continued Mr. Magian, for the use of insufflation in diagnosis, for with average skill and care it was possible to diagnose obstruction in the Fallopian tubes in a very large proportion of cases. It must only be used, of course, where no obvious or gross lesion could be

detected. The surgeon would not employ such a method if he suspected a pyosalpinx, for example, nor when there was the slightest doubt as to the presence of active gonorrhœa, nor when any form of sepsis could be discovered. Without due care septic particles might be blown right into the abdominal cavity with disastrous results. The vagina should be washed out twice daily for a few days, and just before insufflation it was well to paint the vagina and cervix with tincture of iodine. Precautions must be taken as for a major operation. Rubin had done his examinations without an anæsthetic, but this was inadvisable for the ordinary practitioner, as the operation might cause severe shock. Under open ether the cervix was dilated up to No. 10 Hegar, and a hollow sound was passed right into the uterine cavity, so that the internal os could grasp it tightly. The apparatus was also connected with a manometer, which accurately registered the pressure. Under ordinary conditions a pressure of 100 mm. would suffice to blow air through the patent extremities of the Fallopian tubes, but where there was obstruction a pressure of over 200 mm. might be needed; it was unsafe to go much further than this, and it was certainly risky to reach 250 mm. During insufflation the observer listened the whole time with a wide-mouthed stethoscope over the iliac regions for the faint rustling sound which showed that air was escaping through the fimbriated extremities of the Fallopian tubes. If one tube was obstructed, air would only be heard escaping on the other side, and the manometer would probably register at least 150 mm. If the manometer first registered, say, 200 mm. and then suddenly the pressure shot back to 100 mm., it was probable that there had been some slight obstruction in one or other of the tubes which had been broken down by the increased pressure. Where the tubes were diseased—e.g., pyosalpinx or hydrosalpinx—the air pressure in itself might, of course, burst the tube and cause peritonitis. By injecting a thick solution of barium or lipiodol into the uterus and then taking an X ray photograph, it was possible in a fair number of cases to determine the exact position of the obstruction. With obstruction at the isthmus there was not much chance of recovery by operation or otherwise, but if the block was at the fimbriated extremity it was quite likely that the condition could be cured. If it was in the middle of the tube, there was the possibility of making a new and efficient ostium. The injection of the emulsion was always difficult, and results obtained on the X ray plate were often rather unsatisfactory.

Dr. P. M. MILLIARD asked if insufflation could suitably be performed in the surgery of a general practitioner.

Dr. E. C. DUTTON inquired if the injection of lipiodol into the uterus was a safe procedure, and if the results were worth the trouble.

Dr. MURIEL KEYES asked what percentage of patients whose sterility was diagnosed as due to tubal occlusion afterwards consented to operation.

Mr. MAGIAN, in reply, said that he thought it best not to undertake tubal insufflation except in a hospital or nursing home. The patient should remain in bed for 24 hours after the operation. There was sometimes complaint of a little discomfort, and in all cases the anæsthetic caused a certain amount of sickness. The injection of lipiodal might be considered quite safe under the same conditions, but the results of any X ray work were generally unsatisfactory unless the operator was an expert. Most patients who were keen enough to have tubal insufflation done would go on with the treatment afterwards suggested. In answer to a question as to the danger of the practitioner being imposed upon by an unscrupulous woman who concealed a suspicion that she was pregnant, it was necessary for him to be always on his guard. This was an additional reason for the treatment being done in a public institution or in a nursing home with the coöperation of a colleague or assistant.

Reviews and Notices of Books.

WHY TUBERCULOSIS EXISTS.

How it may be and has been Cured and Prevented. A Book of Facts. By R. GOULBURN LOVELL. London: John Bale, Sons and Danielsson. 1926. Pp. 211. 6s.

THIS work is compiled from various sources by Mr. R. Goulburn Lovell, a retired English architect, who is an old family friend of Mr. Henry Spahlinger, and has been closely associated with him in his work since 1912. The reason why tuberculosis exists is, in the opinion of Mr. Lovell, first and foremost because the Spahlinger methods have not been adequately applied to the treatment of the disease. The book contains a large number of letters and reports as well as extracts from the lay press, and there is a good deal of repetition in consequence. For purposes of review it may conveniently be regarded as consisting of two sections, one dealing with the medical and scientific facts available on the subject of Mr. Spahlinger's work, the other with the struggle for official recognition and financial backing.

The treatment consists of two separate and distinct methods of immunisation—active and passive. The technique of preparation of antigen and antiserum is not given here in sufficient detail to enable workers in other laboratories to carry it out. As regards the antigen, the tubercle bacillus is "separated into its component parts," and from these are prepared "separate antigenic solutions which are injected in successive doses" until finally the patient can tolerate "the whole organism of the bacillus." From separate toxins identified and isolated the antisera are manufactured. "Each toxin is injected into one or more horses. . . . No two toxins are injected into the same animal, and for preparing the complete serum not fewer than 28 horses are needed. . . . When this process has been continued for perhaps 12 months, the horses are painlessly bled. The 28 partial sera thus obtained are combined, and the serum, now complete, is put up into ampoules ready for use." Of these partial sera only seven are in existence at the present time. "The possibilities of a cure with these partial remedies are variable. It may be that with one patient a certain combination of the partial sera—if the right ones are to be had when needed—will be enough to turn the scale and effect a recovery. Another patient may need another combination of partial sera, and so on." To these tubercle antitoxins appear to be added the antitoxins of streptococci, staphylococci, and pneumococci.[1] No details of standardisation of any of these numerous toxins and antitoxins are given. On the therapeutic side the book contains records of guinea-pig experiments, bovine immunisation, and human patients. Between December, 1911, and March, 1912, a first series of five tuberculous (human strain) guinea-pigs were treated. In January, 1913, these animals were killed, and found to be free from tubercle bacilli when smears were made from the organs, whilst emulsions of inguinal and lumbar glands failed to infect eight fresh guinea-pigs (Prof. Letulle's report). Meanwhile a fresh series of 17 animals had been started. Seventeen infected guinea-pigs were treated from April to July, 1912. "In July of the same year 15 of them were completely cured: the other two survived for six months and then died." Controls were also made (Dr. Lardy's report). It is unfortunate that no more precise details of these experiments upon which a bacteriologist could assess their value are given. They are exceptionally important experiments, and we regret that Mr. Spahlinger has not repeated them or enabled others to do so.

The statistics of the bovine experiments are vague. In 1916 "some 20 cows" were immunised by Mr. Spahlinger with his vaccine. Six months after

[1] Vide Report of Chief Medical Officer of Ministry of Health, 1922. H.M. Stationery Office.

immunisation the animals were inoculated with living tubercle bacilli previously proved to be virulent for other animals. Since 1917 "several of these cows" have again been inoculated with living tubercle bacilli of ascertained virulence, but none of them became infected. In 1918 "some of these cows" were killed and examined, but no lesions of tuberculosis were discovered post mortem. The report concludes with the statement that "all the cows" vaccinated in 1916 were tested with tuberculin in 1923 with negative results, and were alive and well in 1924. Presumably the words "all the cows" mean all not killed in 1918. (Fifth British Investigation, 1924.)

The record of the human cases treated covers many pages, and space only permits of a very brief summary. In March, 1926, the Lancashire and Cheshire Branch of the British Medical Association collected in five schedules 489 known cases treated, with an average of 74 per cent., stated to be recoveries during 14 years, and 90 per cent., stated to be definite responses during the past year. These records include surgical cases and cases of pulmonary tuberculosis with or without tubercle bacilli in the sputum, some of them having complications such as laryngitis, enteritis, others being evidently relatively slight cases. It is impossible to analyse them, but the results of the cases with tubercle bacilli present may be quoted from the summaries of the five schedules:—

A. 1912–14 ..	42 cases	..	78 per cent.	recoveries.
B. 1915–20 ..	38 „	..	78 „	„
C. 1915–20 ..	265 „	..	70 „	„
D. 1921–24 ..	33 „	..	43 „	„
E. 1925–26 ..	38 „	..	87 „	responding.

The low percentage of recoveries in the cases of schedule D is considered to be due to the few sera which were available. In these records, as in others dealing with new tuberculosis remedies, there appear to be very few cases of lupus. Incidentally, at the long last when a cure for tuberculosis is fully established, it is not unlikely that the cases of lupus will provide the acid test.

Only the bald facts have been given to the outside world, the rest remaining now, as in 1912, Mr. Spahlinger's secret. The statement made by the Lancashire and Cheshire Branch of the B.M.A. and quoted on p. 32 of this book that a full exposition of the methods were given in THE LANCET of Jan. 7th, 1922, is not correct in the sense that the exposition is sufficiently explicit to enable others to repeat his work. Mr. Lovell admits that something vital has been withheld, for he defends Mr. Spahlinger's attitude in this respect, quoting Ehrlich's action with regard to salvarsan in support thereof. There are, of course, numerous other instances where important details of a new discovery in medicine have been kept secret until the value of the work has become assured. Allowance must be made for the fear of exploitation; Mr. Lovell quotes at least one instance in which exploitation of Mr. Spahlinger by a commercial firm has been attempted. But in spite of these considerations and without in any way impugning Mr. Spahlinger's good faith, we believe he has made an error of judgment in not taking the medical profession fully into his confidence. This might have been done, for instance, through a select committee of trusted bacteriologists, a method which has been adopted in the past.

The efforts of Mr. Spahlinger's helpers to obtain official recognition and financial backing make a long story of difficulties, misunderstandings, and recriminations. We do not consider it necessary to discuss the prolonged negotiations here recorded by Mr. Lovell, not always in the most charitable terms, with various public bodies in Britain. Briefly stated, the position appears to be that the supply of complete antisera and vaccines has been exhausted for some years, that the preparation of small quantities of partial serum has, however, been carried on, that the production of the complete antisera on a large scale would take three or four years, and that financial provisions for such manufacture cannot be made. The Ministry of Health has agreed to make a test investigation when an adequate supply is forthcoming, but considers that it has no statutory right to permit the Insurance Committee or the approved societies, from whom it was hoped to obtain substantial donations, to allocate funds for the preparation of the remedies. "At present," writes Mr. Lovell, "only those privileged patients whose friends can make substantial donations—free and unconditional—can hope to benefit from the treatment in Geneva, and only then if it be thought that the partial remedies in existence are likely to effect recoveries."

Now that Mr. Lovell, who is fully in the confidence of Mr. Spahlinger, has published this book, we trust that there will be an end of the sensational press notices which have appeared from time to time, and which in the long run merely serve to discourage anxious patients. We are sorry that certain portions of the book should have been written in such a polemic vein. Sections headed A Travesty of Truth, Helpers and Hinderers, and those criticising the principal medical officer of the Welsh National Memorial Association do not really help the cause in medical circles, but merely disgust those who are anxious to reach scientific truth.

LOCAL ANÆSTHESIA IN OTO-LARYNGOLOGY AND RHINOLOGY.

By JAMES JOSEPH KING, A.B., M.D., Assistant Surgeon in Otology, New York Eye and Ear Infirmary. With Supplement on the Toxic Effects of Local Anæsthetics, edited by EMIL MAYER, M.D. Preface by ROBERT A. HATCHER, M.D. New York: Paul B. Hoeber. 1926. Pp. 205. $5.00.

AFTER an interesting historical summary, the first part of this book is devoted to general considerations and a short exposition of the chemistry and action of cocaine, novocaine or procaine, as the American-produced drug is named, and of epinephrin; of the other similar synthetic compounds, butyn and apothesine alone receive mention. Butyn is condemned for its toxicity, and apothesine for its irritating qualities; the quinine-urea combination is also described as irritating. The author's views accord with the reports of the American Medical Association, except that the last-named body condemns the inhalation of ether as an antidote to cocaine poisoning which Dr. King recommends. An interesting subject discussed is the "synergistic" action of morphine, magnesium sulphate and novocaine. The author has found this combination of great value as a preliminary to operation; 2 c.cm. of a 50 per cent. solution of magnesium sulphate containing 2·5 per cent. of novocaine and ¼ gr. of morphine is injected intramuscularly and repeated three times at half-hourly intervals, the last dose being given half an hour before removal to the operating table. For submucous resection of the septum, the author's method is to give a preliminary injection of scopolamine hydrobromide, gr. 1/150, to paint the mucosa twice with two or three drops of a 20 per cent. solution of cocaine, then with a 1 in 1000 solution of suprarenin, and finally to inject submucously 8 to 10 c.cm. of normal saline containing 5 minims of 1 in 1000 suprarenin solution. He mentions, as Braun's technique, infiltration of the septum with 2 per cent. novocaine-suprarenin solution, but does not give the quantity to be used nor the concentration of the latter drug; apparently he does not use this technique himself, though he says that "the method is sound and may, in time, supplant the use of the more toxic cocaine."

Dr. King has not attempted to provide us with a manual of the technique of local anæsthesia in its application to the surgery of the nose, throat, and ear. The chapters dealing with technique occupy but 36 pages; and these include four half-page illustrations of the after-results of tonsillectomy, which have no real bearing on the subject. This part of the book must be described as perfunctory.

Exactly one half of the book is occupied by the three reports of the committee of the American Medical Association edited by Dr. Emil Mayer. These are not dated, but the first appears to have been issued in 1920, and the third in 1924; this final report has, at any rate, been published before, and was noticed in THE LANCET of May 17th, 1924. The most important recommendations of the Association are that cocaine should not be used by injection, and that cocaine paste or "mud" should be unreservedly condemned. The committee lays down a list of concentrations of local anæsthetics which they believe may be safely applied; for instance, cocaine in the nose not over 10 per cent. and in total amounts of 10 to 15 minims; we think that they do not here take sufficient account of idiosyncrasy, for undoubtedly people do exist who are dangerously affected by a much smaller dose of the drug than this. In this connexion we may quote the account given of a patient's death during tonsillectomy: he had received 2 drachms of a 0·5 per cent. novocaine solution with one drop of 1–1000 adrenalin; he had hypertension and nephritis, but was considered a safe risk; the editor's comment is that "in the opinion of the writer the drug may only be considered as a contributing cause at the most."

The committee collected 43 cases of death by (or under) local anæsthetics, and consider that such accidents are more frequent than is commonly supposed; they point out that death is too commonly due to mistake, such as the unintentional injection of cocaine instead of novocaine, and they insist that the quantities used even in surface applications should be accurately measured.

THE BACTERIOPHAGE AND ITS BEHAVIOUR.

By F. D'HERELLE, M.D., Directeur du Service Bactériologique du Conseil Sanitaire, Maritime et Quarantenaire d'Egypte. Translated in English by GEORGE H. SMITH, Associate Professor of Bacteriology and Immunology, School of Medicine, Yale University. London: Baillière, Tindall and Cox. 1926. Pp. 629. 36*s*.

THIS book contains a complete re-statement of the facts and theories concerning the bacteriophage, and is not merely an enlarged edition of the author's previously published monograph. The amount of work which has been done in this field in the interval which has elapsed since that work appeared in 1921 is shown by the fact that, whilst the original monograph made reference to 88 papers upon the subject, the present book contains 647 references. Dr. d'Herelle has done well in not attempting to incorporate this enormous mass of literature within the framework of his previous publication; he has produced what is, in title and material, an entirely new work.

The subject matter falls into three portions. The largest deals with the phenomenon of bacteriophagy, the technique of its investigation, and the conditions of its occurrence. The second portion deals with the physical properties of the bacteriophage and the evidences and speculations as to its nature. Here we find the author firmly upholding his original contention of the living parasitic nature of the creature, for which he now coins the term "protobe," which, he states, must be understood to designate a protein particle of the smallest possible colloidal dimensions; the dimensions of the bacteriophage are given as about 20 $\mu\mu$ in diameter. Thus, d'Herelle has shifted his grounds considerably since his earlier publication. He then stated that the lysis of organisms by the bacteriophage must in the last resort be due to a soluble enzyme which should be separable from the bacteriophage. He claimed to have demonstrated this experimentally and to have produced a solution of the enzyme capable of causing the phenomena of bacteriolysis which was in this case not serially transmissible. This is the point which has been seized upon repeatedly by opponents of his view, who have maintained the impossibility of obtaining the same results. In the present book he abandons this standpoint, and remarks that such an experiment might be due to a lytic product, either of the bacteriophage or one set free from the dissolved bacteria. The third section is devoted to the use of the bacteriophage in treatment and its significance in epidemics, in which he stoutly maintains that resistance is a question of bacteriophagic activity. It is upon these points that one would like to see some systematic experiments made in this country for the writer's claims are not modest, while up to this point, upon which others have been in the main silent, they have generally proved fairly well founded.

GLIOMA TUMOURS.

A Classification of the Tumours of the Glioma Group on a Histogenetic Basis. With a Correlated Study of Prognosis. By PERCIVAL BAILEY and HARVEY CUSHING. London: J. B. Lippincott Company. 1926. With 106 illustrations. Pp. 175. 21*s*.

IN recent years important developments in histological technique have emanated from the Spanish schools (Cajal, Castro, Rio Hortega, and others), and have resulted in a much more discriminating investigation of neural elements than has hitherto been possible. The results are seen, as far as one branch of study is concerned, in this finely illustrated book on tumours belonging to the glioma class. Older classifications go by the board altogether when the student realises that the authors now distinguish no less than 14 varieties of glioma. Nor is this a mere refinement of histological methods; the distinctions have a clinical as well as a purely technical interest. It has been the endeavour of the authors to trace all cases operated on, since they have been impressed by the fact that in not a few instances of incomplete removal of a glioma the period of survival has been unexpectedly long. They have discovered that the tumours whose cells reproduce the structure of the less differentiated cells in the developing central nervous system belong to an actively growing class much more so than the tumours composed of cells that are more highly differentiated. Hence the importance for prognosis; almost half of the glioma group consists of varieties of tumour which may be regarded as comparatively benign.

THE BASAL GANGLIA AND THE EXTRAPYRAMIDAL MOTOR SYNDROME.

Die Stammganglien und die extrapyramidal-motorischen Syndrome. By F. LOTMAR, privatdozent in the University of Berne. Berlin: Julius Springer. 1926. Pp. 169. M.13.50.

THE output of monographs dealing with the basal ganglia and extrapyramidal disease shows no signs of abating. Nor, unfortunately, is there much evidence in the present instance of any critical combing of so-called striatal syndromes. The conception of the corpus striatum as a convenient resting place for otherwise homeless syndromes and symptoms has received so long a start that it is doubtful whether it will ever be overtaken. Dr. Lotmar includes in his discussion of clinical conditions based on extrapyramidal disease chorea, athetosis, tremor, torsion-spasm, torticollis, tics, "psychomotor" hyperkineses, iteration, palilalia, tonic innervation (Zwangsgreifen), involuntary or spasmodic laughing and crying, and others still, altogether apart from the very numerous vegetative symptoms or symptom-complexes which he specifies. It is frankly impossible to assign all of this conglomerate to the corpus striatum, or possible only at the expense of completely ignoring those contributions by various neurologists at home and abroad which go to prove a quite other localisation for some at least of them. With the author's remark in a footnote, that we are far removed from any unanimity of hypothesis notwithstanding the many important contributions that have been made, we can, however, cordially agree.

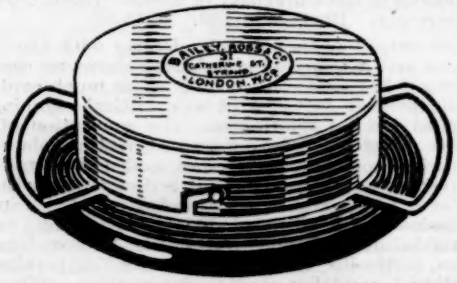
JOURNALS.

Bolletino della Società fra i Cultori delle Scienze Mediche è Naturali in Cagliari. New Series, No. 1, June, 1926.—After an interruption of several years these bulletins have been resumed under the direction of the President, Prof. Carlo Ceni, with Prof. Vanzetti and Prof. Frontali as Vice-Presidents. The first number of the new series contains an address by Prof. Vanzetti reviewing the advances made of late years in biochemistry and biology, culminating in the establishment of three facts: (1) the atom is a labile collection; (2) there exist different elements with the same atomic weight and identical elements with different atomic weight (isotopes); (3) the atomic weights of all the elements are expressed in integral numbers which are practically exact multiples of that of hydrogen. He sees that even the apparently more simple processes of cellular metabolism, the digestion of the proteins, the utilisation of the amino-acids, the chemical mechanism of muscular contraction, the phenomena of fatigue, and the more ordinary pathological changes, are to be found in colloidal systems, apparently simple, but in reality very complicated, in which we are only allowed to perceive a struggle between the individual who tends to defend and maintain the intricate texture of physicochemical equilibrium against the manifold external causes of disturbance. There are three original communications by A. Clementi: on the effects of flocculation of the biliary acids on lactic fermentation, the action of eosin on the central nervous system, and on comparative research with the *B. abortus* and *M. melitensis*. We offer our good wishes for the success of this society and its bulletins.

New Inventions.

A SIMPLIFIED COLOSTOMY CUP.

THERE recently appeared in the *Journal of the American Medical Association* an account of a colostomy belt with an improved colostomy cup. The illustration here given shows a cup made somewhat after the same plan, but simplified to suit the needs of hospitals, nursing homes, and hospital out-patients. The cup is made of copper, nickel-plated, and consists of two parts: (*a*) a cup which is detachable and secured by means of a bayonet catch; (*b*) a rim, made with a wide metal flange, from which project rigid loops to which elastic webbing or an india-rubber belt may be fitted. The advantages claimed for this colostomy cup are: the cup is unbreakable,



does not warp, is non-inflammable, and can be easily and effectively sterilised by boiling, while it is roomy enough to be lightly lined by toilet paper or gauze, and can be removed and cleansed easily. The flange is wide and rigid, and fits well on to the surface of the abdomen. It is best used without any pad, but an indiarubber pad or a layer of gamgee tissue can be worn with it if desired. The appliance is easily kept in place by a piece of elastic webbing with a perineal band. This can be home-made and fastened with hooks and removed for cleaning. The cups can be kept in stock at hospitals and other institutions, and it is not necessary to have a specially made belt for patients with temporary colostomy.

Messrs. Bailey, Ross and Co., 31, Catherine-street, Strand, London, the makers, stock the cups in the following sizes: depth, $1\frac{1}{4}''$ and $1\frac{1}{2}''$; inside diameter, $2''$, $2\frac{1}{2}''$, and $3''$.

GEORGE F. STEBBING, M.B., B.S. Lond.

Reports and Analytical Records.

LOBELIN "INGELHEIM."

(CHAS. ZIMMERMANN AND CO., 9 AND 10, ST. MARY-AT-HILL, LONDON, E.C. 3.)

THE dried extract of *Lobelia inflata*, official in the pharmacopœias of Belgium and the United States of America, has long been used as an anti-asthmatic and expectorant. In 1918 Prof. Wieland, of Heidelberg, isolated the alkaloid known as lobeline, of which the hydrochloride is put up in the preparation now supplied. Lobeline is claimed to be a specific stimulant of the respiratory centre without simultaneous action upon the neighbouring vomiting centre; it is stated that one hundred times the physiological dose has been administered without inducing vomiting. Clinical experience is adduced from German and Austrian sources to suggest that a dose of lobeline has succeeded where other remedies have failed in restoring regular breathing after an over-dose of morphia and in relieving the dyspnœa of pneumonia attended with cyanosis. Its employment is suggested in CO poisoning. The stimulating action of the drug on the depressed respiratory centre of mice has been recently (séance, 9th July, 1926) demonstrated at the Strasbourg Institute of Experimental Medicine and further work in the Physiological Laboratory of the Middlesex Hospital Medical School is set out in our own columns this week. A communication on the subject was made to the Section of Therapeutics and Pharmacology, Royal Society of Medicine, on Tuesday last. Lobelin "Ingelheim" is put up in ampoules containing for children 1/20 gr. (0·003 g.), for adults 3/20 gr. (0·01 g.) to be given subcutaneously, and boxes are supplied containing 2, 6, or 30 ampoules.

VAN HOUTEN'S PURE SOLUBLE COCOA.

(VAN HOUTEN LTD., COCOA HOUSE, 15 AND 17 FINSBURY-SQUARE, LONDON, E.C. 1.)

The contents of the package (which is guaranteed to contain pure soluble cocoa of the finest quality and full weight) weighed $\frac{1}{4}$ oz. over the $\frac{1}{2}$ lb. net weight claimed on the tin. When analysed this cocoa gave the following results:—

Moisture	5·64 per cent
Fat (cocoa butter)	26·50 „
Total mineral matter	6·66 „
Water-soluble ash	5·54 „
Ash insoluble in hydrochloric acid	Nil.
Alkalinity of water-soluble ash as potash (K_2O)	2·63 per cent.
Protein	19·7 „
Calorie value per lb.	1250

The small proportion of alkali employed in its manufacture confers on it the useful property of remaining in suspension in the liquid and thus preventing the formation of a sediment on the bottom of the cup. The flavour is delicious, while the extreme fineness of the grinding prevents any trace of grittiness in the mouth. There is no evidence of the addition of either starch or finely comminuted cocoa shell. This cocoa is an excellent specimen of its class and maintains the high character we found it to possess when examined in our laboratories over 20 years ago.

"DIPLOMA" CRUSTLESS CHEESES.

The report on the crustless Cheddar and Cheshire cheeses produced by the Wilts United Dairies, Ltd., which appeared in our issue of Nov. 27th (p. 1118), failed to mention specifically the brand name of these cheeses—"Diploma."

THE LANCET.

LONDON: SATURDAY, DECEMBER 18, 1926.

THE PANEL DOCTOR'S GRIEVANCE.

IN the face of professional dissatisfaction with the disciplinary machinery of the National Health Insurance Act the Ministry of Health still stands stiffly upon its dignity. At a conference between its representatives and the Insurance Acts Committee, held on Nov. 30th, no definite concession was announced, or even foreshadowed. It is well known that panel doctors have always felt a certain disappointment at the absence of a right of appeal to the High Court. The practitioner enjoys at present, it is true, a right of appeal; but it is an appeal to the Ministry, and it is heard by officers of the Ministry. In this country it is admittedly a principle of law not only that justice should be done, but also that it should seem to be done; a tribunal should convince litigants of its disinterestedness; it should hear all evidence in open court, should allow every accused person an opportunity of making his defence, and should assign reasons for its decisions. While nobody suggests that the Ministry is corrupt or partial, the fact remains that its function in the disciplinary machinery of the national health insurance system fails to fulfil these requirements. Let us see how that system works. If a complaint is made against a panel doctor, a committee is assembled to hold an inquiry. The committee is a competent body, specially equipped for its purpose; it examines witnesses in the presence of the person whose conduct has been called in question; it allows him his natural right of making his defence to a specific charge. The object of the committee is to reach findings of fact which are tantamount to a verdict of "guilty" or "not guilty"; the effect of the verdict is either to exculpate the practitioner against whom the charge is made or to convict him and to assess the measure of blame and punishment appropriate to the case. The committee has no power to pass sentence, but its duty is to make recommendations. Up to this point the machinery has operated without complaint, but from this point onward its working may be open to grave criticism.

Let us suppose that the committee recommends that no penal action be taken against the person whose conduct has been the subject of its inquiry. At this stage that person has a right of appeal to the Minister, but, even if he feels dissatisfied with the committee's findings in points of detail, it naturally may not occur to him to exercise his right of appeal against a decision which is substantially favourable. The traditions of English procedure would hardly suggest that an acquittal at the police-court should be followed by conviction and punishment at the assizes. Yet that strange sequence of events is not unlike what may happen to the panel doctor in the situation already described. The officers of the Ministry, sitting *in camera*, re-hearing the case without either seeing the witnesses or calling upon the defendant, may announce an adverse decision. The committee's recommendation may be set aside and a smart fine inflicted, while, for all that the victim knows to the contrary, the grounds of this new decision may be the merest caprice, unrelated either to the original charge or to the evidence previously given. It is small wonder that panel doctors are disquieted by such incidents or that other practitioners display reluctance to expose themselves to the risk of such treatment.

The answer of the Ministry is that the inviolable mysteries of the British constitution forbid the Minister to part with his sacred responsibility. As we have already observed in this connexion before, there is another and much more important principle of constitutional law at stake—namely, the usurpation of judicial functions by executive authorities. "There is a growing tendency of Government departments and Government officials," said Lord Justice FARWELL some years ago, "to claim the right to act without regard to legal principles and without appeal to any court." This opinion does not stand alone. Sir FREDERICK POLLOCK has written weightily of the ever-increasing propensity, "constitutional traditions and safeguards notwithstanding," to confer more and more discretion of a substantially judicial kind upon officials of the great Departments of State. Finally, only a few days ago, when addressing the Birmingham Law Students' Society, of which he is this year president, the Lord Chief Justice commented upon this aspect of "the great and growing pretensions of the bureaucracy." It was becoming common, complained Lord HEWART to find in Acts of Parliament a clause to the effect that in matters of dispute the decision of the Minister should be final and binding and conclusive for all parties. If the national health insurance disciplinary machinery raises any issue of constitutional principle, it would appear that our foremost jurists will be found on the side of the panel doctors, not on that of the Ministry of Health.

THE ECONOMIC BASIS OF THE NURSE'S TRAINING.

THE glamour of nursing as a vocation for educated young women has passed away, with other enthusiasms regenerated by a state of war. Indeed, the revival of interest in this calling, which followed the release from military service of many zealous and competent V.A.D.'s, was short-lived. Most of the women who were to be dependent on their earnings examined the conditions of work and leisure and the ultimate prospects of the nursing profession and reluctantly decided against its adoption on sober economic grounds. Others, more favourably placed, were able to contemplate a life of service to the sick without fear of indigence in old age, but, having some experience of the strain of ward work shrank from the conditions involved in training, and took up medicine instead. The result was for a time to flood the market with medical women, while the hospitals still cry out in vain for probationers of the right type. The reason is largely that the student nurse, whatever her circumstances, has no option but to pay for the whole of her training in arduous service, whereas the medical student is allowed to contribute some £250 towards education, the balance being met not by her labour but by endowments and State grants to the schools. Moreover, the probationer's service is so necessary to the hospitals that she is offered in return not only tuition but payment in money and in kind, and this very fact may imply the paradox that she is buying her experience at too great a price. Practical work is, of course, indispensable in the study of both branches of the healing profession; but, ideally, its limits should be set not, as in nursing, by the amount of hospital work that has to be done by somebody, but, as in the curriculum of the medical student, by the amount that he or she can do without getting too tired to benefit from demonstrations and

theoretical instruction. In short, the time to give ungrudging service to the sick is when the student is fully qualified; to exact such service before is to blunt a weapon that is not yet tempered.

It is admittedly difficult to do good educational work in institutions which exist primarily for another purpose—the care of the sick poor. The medical schools, being financially independent of the hospitals, do not find the difficulties insuperable, but the training schools for nurses are in a less fortunate position. Under present conditions a shortage of recruits in any year is likely to involve extra work for those who have already enlisted, since these form the chief labour-supply of the voluntary hospitals. The hospitals are always pressed for funds and the extra cost of maintaining a larger staff of qualified nurses and domestic helpers to supplement the supply of workers would not willingly be borne by them. Miss MARY A. NUTTING, in the first of a series of essays bound together under the title A Sound Economic Basis for Schools of Nursing,[1] finds a remedy for the baffling problems arising out of the interdependence of hospitals and student nurses in the separate endowment of training schools. Possible sources of funds would be grants from public authorities, private benefactions and even, under the altered conditions of training that would ensue, fees chargeable to students, scholarships and loans being available for those without private means. Among the direct benefits to be anticipated would be the maintenance of a body of trained experts to give the oretical instruction and practical teaching, and the provision of adequate class-rooms, equipment for teaching, libraries, and recreation-rooms. Indirectly, by subsidising a larger hospital staff, shorter hours for students might be secured, with longer vacations and less night duty. It is clear that endowments and grants to training schools are desirable and that the recruiting of educated women to the profession would be greatly stimulated by the changes they would bring about. The possible secondary effects, which would be less acceptable in many quarters, would be to hasten the recognition of the need for grading nurses, as proposed in the report of the Rockefeller Committee on Nursing Education,[2] and to raise still further the market value of domestic servants. But since the realisation of Miss NUTTING'S ideals are at present still remote, it behoves us to examine less drastic suggestions for improving the attractions of hospital life. The Labour Party has just issued a draft report which will be submitted for consideration to a conference of nursing and kindred organisations to be held in the Caxton Hall, Westminster, on Jan. 28th, 1927. An account of average conditions throughout the country has been compiled, from answers to a questionnaire as to social and educational qualifications, period of training, deposits, wages, hours on and off duty, holidays, meals, living accommodation, superannuation, and so forth. Various recommendations are made, from which we select some of those relevant to the training schools. The Labour Party agrees with Miss NUTTING in advocating the need of financial provision for the training schools, and of separate administrative authority. In order that the probationer's time should be entirely given over to the study and practice of her profession, they also suggest an increase in the permanent nursing staff and the delegation of cleaning duties to maids and orderlies as soon as the probationer has received adequate training in their performance. Among the more important specific recommendations are the equivalent of the school-leaving certificate as the educational standard for admission, four months' preliminary instruction in elementary physics, chemistry, anatomy, and physiology, and a period of training covering two years and eight months. (It will be remembered that the report on Nursing Education, quoted above, has suggested a reduction to a concentrated course lasting two years and four months.) It is recommended that there should be no contract of service beyond a month's notice on either side, and that a 48-hour week with an eight-hour day, inclusive of lecture hours, should be the standard. Consecutive night duty should be limited to three months, and no untrained nurse should have full responsibility for a ward by night or by day. Not less than one free day a week, a week-end per month, and three weeks a year should be allowed. The uniform should be reconsidered and designs adopted "more in accordance with the comfortable dress now worn by women in other employments."

Many of these recommendations are neither new nor revolutionary, and, indeed, reflect the practice current at some hospitals. An exception is the high standard required for preliminary education, which could hardly be enforced until recruits are more numerous; the same may be said for the reduction in the period of training. The least logical recommendation is No. III. 9 which reads "Salaries during training should be sufficient to meet all needs, including holidays, and at present £40 per annum should be the minimum." It is unreasonable to expect hospitals to provide larger salaries for probationers if the amount of routine work they are to do is simultaneously to be reduced. While there should always be a channel through which suitable candidates without private means may take up nursing, there is general agreement among those who have the highest ideals for the profession that it is undesirable to bribe probationers to enter the service of hospitals by the promise of a high initial wage, which is only economically possible if earned by unskilled work. The draft report gives no specific suggestion as to the salary that a fully trained nurse doing private work or attached to a voluntary hospital should command, recommending the organisation of the profession on trades-union lines and the subsequent formation of a National Joint Council to work out scales. We doubt whether this recommendation will be favourably received in the nursing profession, where the relation between individual employers and employed is peculiarly intimate. On the whole, however, the document is a moderate and fairly accurate presentation of the position of the nursing world to-day. If it over-estimates the effective demand for the highly skilled educated nurse, and under-estimates the public need for a supply of deft reliable workers to attend to the household as well as to its sick members, this lack of perception is not peculiar to the Labour Party.

[1] London and New York: Putnam's, 1926, pp. 372, 10*s*. 6*d*.
[2] THE LANCET, 1923, ii., 1195 and 1203.

FILTER PASSERS AND INCLUSION BODIES.

THE zealous search for microscopic forms of parasites in the tissues of animals infected with diseases of unknown cause has resulted in many finds of very varying interest and importance. The ultra- or infra-microscopic viruses have been commonly designated filter-passers since the first discovery of the filterability of the virus of mosaic disease in plants by Iwanowski in 1892 and Beijerinck in 1898, and of foot-and-mouth disease by Löffler and Frosch, also in the latter year. Since then 40 or 50 such viruses causing infective diseases in animals have been

placed by different observers in this group. The chief reason why pathologists have assigned so many to a single category seems to be the inability to recognise an infective agent microscopically. The criterion of filterability is less definite than that of visibility and the former character varies very much in the case of different diseases. The ability of the virus of many diseases which have been placed in the group to pass a fine porcelain filter is doubtful. The discovery of these abnormal bodies inside the cells of the host has been recorded chiefly in these diseases, perhaps partly because in them the search for visible causative agents has been keener. In some cases the inclusion bodies are not very readily demonstrated nor very uniform in appearance, but in others, such as vaccinia and rabies, they are of very real characteristic and even diagnostic importance. The attempt to explain the association of such large forms with an infra-visible virus has led to the invention of the name chlamydozoon for the hypothetical micro-organism on the view that it was covered by them as with a garment. R. J. Ludford and G. M. Findlay, in the *Journal of Experimental Pathology* for October last, declare that this name now implies a widely discredited hypothesis and is merely a cloak for ignorance. Nevertheless, the bodies themselves and their riddle have an abiding influence, and these two workers have given a valuable aid to their study by the pictorial review of 22 such microscopic appearances culled from the literature of diseases due to ultramicroscopic viruses. Representations of bodies whose nature is unknown are necessarily vague or diagrammatic and the authors have not even drawn them all on the same scale. But they have well indicated the variety in form and position in the cell of these objects and the extent of the problem which remains unsolved. It is well to be reminded from time to time of the large range of infective diseases the nature of whose cause is quite unknown, and this survey of the observations already made should assist their comparative study. The same writers give a detailed account in the same number of their observations on the cytology of fowl-pox. They endorse the view most widely held at present that the inclusion bodies here are not parasites but pathological structures belonging to the host.

DR. ESSEX WYNTER'S GIFT.

A GREAT and discriminating piece of generosity was recorded last week, when, at a meeting of the governors of Middlesex Hospital, it was announced that Dr. Essex Wynter had given to the hospital his beautiful private house, Bartholomew Manor, Newbury, together with a large group of sixteenth century cottages and the surrounding land. Major Astor, in making to the court of governors an official declaration of the gift, added that Dr. Essex Wynter not only proposed to dedicate, after the death of himself and his wife, his fourteenth century home and its dependencies of nearly an equal antiquity to be held in perpetuity as a home for retired members of the nursing staff of the Middlesex, but with extraordinary open-handedness was providing an endowment fund for the maintenance and upkeep of the property. A side of Dr. Wynter's gift which marks its deeply personal character is that he is presenting to the institution, with which he has been so long and honourably associated, a property over which he and his wife have watched with loving care. Through their personal skill and work the old manor house and the cottages on the estate have been intelligently repaired, while the surrounding land has been repurchased, securing a suitable and unspoilt environment for the buildings. Already two of the cottages have been reconstructed to form self-contained homes, which are now occupied by nurses, giving a practical example of what this fine gift to the hospital will eventually imply. The son of a great London medical school has in this beautiful gift recognised in a practical yet moving way indebtedness to his home of learning and the theatre of his life-work.

Annotations.

"Ne quid nimis."

BIOLOGY AND HUMAN LIFE.

THE problems of mental deficiency in their relation to the health of the community in the present and the future is beginning to attract the attention which it deserves. There are, says Sir George Newman in a recent report,[1] 33,000 children in England and Wales returned as mentally defective, and some 200,000 more as exceptionally dull and backward. Neglect of these children at the stage when something can be done for them leads to a great mass of unemployability, industrial incapacity, delinquency, and even of crime when they grow up. The conference, whose concluding session is reported on p. 1283, considered these problems of mental deficiency from many different aspects. Sir Leslie Scott laid down what he thought was a reasonable aim—namely, effective control of such defectives as are anti-social or unbalanced, leaving for communal care those who in the right environment can live a fairly happy and useful life. As to the form which this control should take opinions were sharply divided. It is only the Eugenics Education Society which has as yet had the courage to draw up an outline of a practical eugenic policy.[2] But it is not only eugenists who feel that man has gone so far in bringing his physical environment into subjection that it is about time he set about making himself more worthy of his surroundings. Such is, for instance, the theme of Prof. Julian Huxley's Norman Lockyer Lecture delivered last month before the British Science Guild. Modern biology has, in truth, come nearer our daily lives than some people remember, and possibilities of deliberate human improvement have come very near, if they have not already entered, the field of practical action.

Broadly speaking, there are two schools of thought on the subject. One is fired by the new knowledge of heredity, vitamins, and the like, and observes how successfully biology has dealt with the parasites of men, animals, and plants. It asks that our knowledge should be vigorously applied and that active reform should be instituted. Prof. Huxley in particular urges the pressing urgency of doing something about birth control and the necessity, rather less immediate perhaps, of a eugenic programme. He views human increase as inevitably leading to disaster, and would have us weed our population and breed our population as we weed our gardens and breed our cattle. The other school is biological, too, though it consists more of naturalists than of experimentalists. It reflects on the fact of experience that animate nature is a wonderfully good fit and that the components live in a harmonious adjustment with one another, which seems to be instinctive or automatic; that the disturbance of this whole which follows the disturbance of one of the parts is apt to extend to a breadth and length which we cannot predict; and that after such a disturbance the components will settle down into a new whole, which will be as stable as its forerunner until its constituents or surroundings are altered. It believes, in fact, that live things regulate themselves quite well and that man has not lost his animal characteristics so completely that he has none of this capacity for automatic regulation left. In its most complete form it is the school of *laissez faire*.

Most ordinary people will want some compromise. Biological knowledge is great, but biological ignorance is greater, and hardly anyone will be prepared to give themselves over to a life ordained and directed by

[1] Annual Report of the Chief Medical Officer of the Board of Education for the Year 1925. H.M. Stationery Office. 1926. 1s. 6d.

[2] Eugenics Review, 1926, xviii., 95.

biologists. It is sufficient to recall what would have happened if we had all kept strictly to the diet which the physiologists of 1910 would have told us was complete and adequate. They will agree that it is very proper to weed your garden, but that it is rather dangerous to do it too thoroughly before you have made up your mind quite clearly which plants you are going to class as "weeds." They will agree that selective breeding might do as much for men as for cattle if we can settle what we are going to breed for before we begin. And if they are of the sort which wants to do something, they will probably come to the conclusion that it would be good to pull up the very worst and undoubted weeds and to leave the speedwell in the cabbage patch for the sake of its beauty and cheerfulness, though it is not much use to eat, and to encourage the making of good and clever people without putting too many obstacles in the way of those who are not so obviously desirable but out of whom astonishingly fine children sometimes come. And of birth control they seem to know as much as is necessary already. Anyone with eyes to see can perceive the progress which our community as a whole has made—physically, mentally, morally, and spiritually; it is a sight which more than anything else encourages those who look for further advance. Prof. Huxley tells us that we "are becoming a scrub herd of mongrels." If it were in any degree true it would be depressing; fortunately it is not.

THE TOXÆMIA OF INTESTINAL OBSTRUCTION OR PARALYSIS.

A CLINICAL and experimental investigation [1] into the causation and treatment of the toxæmia associated with intestinal obstruction and peritonitis has been made by Mr. B. W. Williams at St. Thomas's Hospital. It is a matter of common observation that constipation or intestinal obstruction in the large bowel gives rise to no acute toxæmia until the stagnation extends to the small intestine, and on Mr. Williams's theory this fact is easy to understand. The arguments on which his hypothesis is based are clearly set out. The author first draws attention to the similarity of symptoms in acute obstruction and in the late stages of acute peritonitis and to the resemblance both bear to the clinical aspect of anaerobic toxæmia resulting from war wounds. He suggests the possibility that in all three conditions the patient is suffering mainly from an acute toxæmia resulting from abnormal proliferation in the obstructed intestine of anaerobic organisms. The normal distribution of anaerobes in the intestinal tract is then discussed. *B. welchii* requires for its growth and the production of toxin an anaerobic medium which should be neutral or slightly alkaline. In acid medium the toxin is destroyed and the bacillus would be rapidly outgrown by other organisms. The lower part of the ileum is the only section of the intestine where the optimum conditions are fulfilled, but normally the passage of material through the small intestine is extremely rapid and the period during which the reaction is suitable for proliferation would be very brief. On the hypothesis set out by Mr. Williams there should be a great proliferation of *B. welchii* in the small intestines of patients with acute obstructions, and an examination of suitable post-mortem material an enormously increased quantity of this bacillus—among many others—was indeed obvious. Animal inoculations showed, moreover, that not only the bacillus itself, but the presence of its exotoxin, could be demonstrated in the contents of the small intestine in advanced obstruction in human cases and in cases where the obstruction had been experimentally produced in animals. The next step was to attempt to find evidence that *B. welchii* toxin is actually absorbed from the intestine in these cases and is responsible for the toxæmia. Mr. Williams claims that the clinical features of late cases and the presence of fine fatty degeneration in the heart and liver of patients dying of acute obstruction and of peritonitis are compatible with the absorption of *B. welchii* toxin and that the intravascular hæmolysis shown in the endothelium of the heart and great vessels, in the absence of evidence of infection with other hæmolytic organisms, is strong corroboration of such absorption. The final test of the hypothesis, however, was the administration of *B. welchii* antitoxin in suitable cases of peritonitis and obstruction. It was decided to use cases of appendicitis for the clinical trial because (1) a fairly large number of cases are available at St. Thomas's Hospital, (2) cases which are "going wrong" give fair clinical warning, (3) the mortality is well established and fairly constant between 5 and 10 per cent. It was decided to administer serum to all cases in which clinically the chances of survival appeared to be 50 per cent. or worse. This included (*a*) moribund cases of severe general peritonitis; (*b*) streptococcal peritonitis, unlocalised, in children under 12 years; (*c*) cases which after appendicectomy continued to show signs of advance of the disease by rising pulse-rate, abdominal distension, and toxæmia. In order to increase the number of available cases the coöperation of three other surgeons was enlisted.

The series consisted of 256 consecutive unselected cases of which 18 of the most severe were treated with *B. welchii* antitoxin. In the series there were three deaths, giving a mortality of 1·17 per cent. During 1925 a control series of 111 cases, also consecutive and unselected, under surgeons who were not using the antitoxin, gave a mortality of 6·3 per cent. The clinical effects of the administration of antitoxin were often striking and immediate, restlessness being diminished or abolished, cyanosis disappearing, and sleep ensuing. The pulse-rate fell in cases of very marked toxæmia though not for a day or two, abdominal distension disappeared, though sometimes slowly, and the bowels began to act spontaneously. Similar clinical effects were observed after the use of antitoxin in a much shorter series of cases of obstruction, and though the author is careful to point out that similar signs of improvement may and commonly do follow the simple surgical relief of obstruction, and that the series is too short to be at all conclusive, the fact remains that of 54 cases of acute intestinal obstruction only five died, the normal mortality being 24·8 per cent. Mr. Williams gives suggestions for dosage and indications for treatment with *B. welchii* antitoxin for the benefit of those who wish to try a method which is still in the experimental stage and discusses its disadvantages. These include the sensitisation of the patient, the possible production of rashes, the remote risk of anaphylaxis, and lastly the expense involved. The serum is costly and if it is to be of use large amounts must be given. The vast majority of cases of acute appendicitis, however, will recover by treatment on ordinary surgical lines. In cases which develop signs of intestinal obstruction or paralysis and toxæmia, however, the mortality is very high and the disadvantages of serum therapy are of less moment. It is therefore to be hoped that a trial will be given to this method of treatment which is, of course, only ancillary to the relief of obstruction or the removal of the cause of the peritonitis.

[1] British Journal of Surgery, No. 54, xiv., 295.

THE HOSPITAL SAVING ASSOCIATION.

THERE is no check to the progress of the Hospital Saving Association. The report for the year ending last July, which has just been made available, shows that an organisation established so recently as 1922 has already an income of £150,000 and 267,000 contributory members, more than 100,000 of whom joined during the last 12 months. Since the rate of increase works out at over 2000 members a week the total must by now be considerably larger, while the income is growing in proportion. No doubt it would be unduly optimistic to suppose that the present rate of progress will continue indefinitely—three years

ago there were 15,000 members and the revenue was £22,000—but the number of persons eligible for membership is so large that there is abundant room for further expansion; there are hundreds of thousands of eligible persons in the London district who have yet to realise the advantages of a system of health insurance of which the premium is only 5*d.* a week. At the sacrifice of ten cigarettes a fortnight the insurer is made free of hospital treatment not only for himself or herself but for all dependents living under the same roof. The income limit, moreover, is wide, and entry is permitted to the single person earning up to £4 a week, to the married person without children under 16 up to £5, and to the married person with such children up to £6. When such advantages are to be enjoyed at so trifling a cost it is not surprising that the great army of people who earn small incomes should be eager to qualify for them. Nor are the insurers the only beneficiaries, since last year the hospitals received over £80,000 in return for their work for the Association. Many of the hospital authorities regard the Association's work as a prop to the voluntary hospital system—a prop that will do much to prevent it from falling into the hands of the State or municipalities—whilst it is claimed that experience shows that the general practitioner is in no way injuriously affected. A year ago Lord Hambleden, the chairman, prophesied that the membership would, in time, reach a million, and the progress that is being made suggests that the Association will hardly have reached its 'teens by the time the prophecy comes true.

PLASMOCHIN.

WE have already given some account of the properties of plasmochin, a synthetic remedy for malaria, whose discovery was announced at the conference of Naturforscher and Ärzte, held at Düsseldorf in September.[1] A recent supplement to the *Archiv für Schiffs- und Tropen-Hygiene* (vol. xxx., 3) reports in full the four papers communicated to the conference. The first is by Dr. H. Hörlein, director of the drug department of the Elberfeld factory, where plasmochin was developed, who points out that quinine is so unpleasant to take, has such troublesome after-effects, and is so expensive, that the ever-optimistic chemist felt he ought to make something to replace it—preferably something which would destroy the malarial crescents which infect mosquitoes. It was a study of quinine synthesis that led Perkins to his first coal-tar dye, mauvein, in 1856, when quinine was thought to have two chinolin rings in its molecule; this idea, says Dr. Hörlein, was in 1890 proved mistaken by the work of the Elberfeld dye factory. Quinine he describes as an alkylamino-6-methoxychinolin, and he adds that plasmochin is something similar. More than that he will not say, because so many countries allow pirating of chemical work, though these researches are in the highest interests of mankind. Plasmochin, like Germanin (Bayer 205), is the outcome of the joint work of the chemical and chemotherapeutic sections of the Elberfeld factory, and in the second paper Dr. W. Röhl, head of the chemotherapeutic laboratory, takes up the tale of its investigation. Human malaria, he says, attacks only men and apes, but bird-malaria, an infection with *Plasmodium relictum* (formerly Proteosoma) carried by *Culex pipiens*, is influenced by quinine, and is easier to work with. He devised a method of dosing canaries by means of an œsophageal catheter, a known quantity of the drug being passed into the stomach. When a bird is infected by intramuscular injection, parasites appear in the blood in five days; if quinine hydrochloride is given for the first six days after injection they do not appear till after the tenth. The dose of quinine for a bird of 20 g. is 1 c.cm. of a 1/200 or 1/800 solution; higher dilutions are ineffective, and lower dilutions are harmful, and so Dr. Röhl puts what he calls the "working margin" of quinine at 1 : 4. Using this technique he investigated hundreds of drugs for a long time without result. Finally he tried plasmochin, and found that 1 c.cm. of a 1/50,000 solution, given daily for six days, delays the development of the plasmodium as well as quinine in dilution of 1/800; the drug is, therefore, 30 times as powerful. Birds take it well up to 1 c.cm. of 1/1500 solution, so its "working margin" is 1 : 30; it is thus much more convenient than quinine. When an already infected bird is treated there is no effect on the first day, but by the second all the larger parasites, including the gametes, have disappeared or degenerated. The vast majority are killed, the destruction being due to direct action on the parasites, and not, Dr. Röhl considers, to increase in antibody formation, for plasmochin has no effect on an infection made two hours after its administration. It is the first synthetic drug found useful against avian and human malaria. Prof. F. Sioli, of Düsseldorf, describes how plasmochin was tested in the treatment of general paralytics inoculated with tertian malaria. The daily dose at first was 0.75g., and was gradually raised. The fever ceased at once, but relapses occurred. The most satisfactory course was found to be 0.75 g. a day in 2 or 4 doses, continued for three days after fever had gone and parasites had disappeared, the same dose being then given every fourth day for two or three weeks. There were no deaths, and the only complication was a cyanosis which stopped treatment, it being always found that the patient was then cured. Plasmochin, says Dr. Röhl, cures the tertian malaria of general paralytics, and can be confidently recommended. The last paper is by Prof. P. Mühlens, of Hamburg, who gives an account of his experiences in treating natural malaria in Hamburg. During his investigations he laid special stress on making exact blood examinations daily, and had the doses administered by his own assistants, so as to be quite sure what doses patients were actually taking. The plasmochin was generally given in 0·3 g. tablets, and when the patients got about 2 g. in a day they complained of pain in the stomach, which disappeared when the dose was reduced. Large doses produced a slight cyanosis of tongue, gums, and nails, which was not, he thought, toxic, but vasomotor. A daily dose of 1·5 g. caused the parasites to disappear in five to seven days, and then after an interval of four to five days further doses were given for three days. The whole course lasted four to six weeks, but was difficult to enforce, as the patients (there were 134 of them) felt so well that they were apt to leave the hospital too soon. Relapses were rarer in tertian and quartan malaria than with quinine, but, if plasmochin was used alone they were more frequent in tropical malaria, because, though plasmochin deals effectively with crescents, it has less influence on the small ring forms than quinine. After plasmochin even late relapses showed no crescents, whereas they were still present after quinine. This disappearance is held to prove that they are formed in the peripheral circulation. As quinine and plasmochin seemed to be auxiliaries, they were given together, in tablets containing 0·15 g. plasmochin and 2 g. quinine, three of these being taken every day. Under this treatment relapses ceased to occur. The tablets fall to pieces in water, becoming a suspension which children take readily. As for acute malarial fevers, says Prof. Mühlens, 250 cases have been treated in the Balkans, and many in Spain and Italy; the new drug has been as successful in curing them as it has proved itself in Hamburg, whilst blackwater fever has also been satisfactorily treated. He summarises the position by the statement that plasmochin seems to cure malaria more easily than any other drug, and, above all, it kills the gametes and so lessens the chance of infecting mosquitoes and further spreading the disease. It has also been used for prophylaxis in a dose of 1·5 g. twice a week for nine weeks in West Africa, apparently with great success.

Prof. Mühlens ends his paper with well-deserved compliments to the Elberfeld factory and its staff.

[1] THE LANCET, Oct. 9th, p. 765, and Oct. 16th, p. 825.

MEDICAL FEES AT INQUESTS.

AFTER a long voyage the Coroners (Amendment) Bill, embodying reforms recommended many years ago by Sir Mackenzie Chalmers's Committee, has at last reached harbour. Twice its progress was interrupted at the Committee stage in the House of Commons for the tiresome and not very creditable reason that a quorum of 20 Members of Parliament could not be found. Each of these set-backs consigned the Bill to the bottom of the Parliamentary list, but, fortunately, the items above it were disposed of with unexpected rapidity, and, when at last the Committee stage was reached, various proposers of alterations generously forebore to press their amendments. In its present form—as may be seen from our Lobby Correspondent's report—the Bill has not been greatly changed from its original wording. The disqualification clause at the beginning now covers the holding of the office of mayor as well as that of councillor or alderman of the local authority which appoints the coroner. A new clause empowers the Coroner of the King's Household—an officer whose labours are, happily, not heavy—to appoint a deputy. The main change in the final stages of the Bill was the insertion of a clause fixing the fees of medical witnesses. At first the Home Office were to give 1 guinea to a practitioner attending an inquest whereat he has made no post-mortem examination, 1½ guineas for making a post-mortem examination and reporting the result to the coroner without attending to give evidence at the inquest, and 2 guineas for a post-mortem examination, report of result, and attendance to give evidence. In the final Committee stage amendments moved by Sir Richard Luce and Dr. F. E. Fremantle succeeded in slightly raising all these fees. The fee for mere attendance is increased to 1½ guineas for each day on which the practitioner is required to be present; the post-mortem fee is raised from 1½ to 2 guineas; and the inclusive fee of 2 guineas for post-mortem examination, report, and attendance is brought up to 3 guineas for the first day and 1½ guineas for every subsequent day on which attendance is required. Even with these increases the fees will hardly compensate practitioners for the loss of practice which a visit of uncertain duration to a coroner's court involves; but the advance goes a little way towards approximation with modern standards of money value. The Act takes effect next May; meanwhile the Expiring Laws Act will continue the temporary provisions (as to number of jurors and as to inquests without juries), which will then be superseded.

DIFFUSE GASTRIC POLYPOSIS.

Dr. Harold Brunn and Dr. Felix Pearl,[1] of the Surgical Services of the University of California Medical School and Mount Zion Hospital, remark that diffuse gastric polyposis, otherwise known as polyadenoma, adenomatosis gastrica, or papillomatosis gastrica, is apparently a rare disease, as they have been able to collect only 84 cases from the literature from 1820 to 1925, including five proved cases and seven probable cases which came under their personal observation. The average age of the patients was 54 years, the youngest being 20 and the oldest 82. The proportion of males to females was 3 to 2. Gastric polyposis may be either congenital in origin or arise from an inflammatory basis. It is noteworthy that Fibiger and Wassink were able to produce polyposis experimentally in the stomachs of healthy rats by feeding them with nematodes or cockroaches containing nematodes. Gastric polyposis may appear either as district polypi adenomatous in nature or as slightly elevated hypertrophic plaques which are probably telangiectatic in origin. The symptoms and physical signs are not characteristic, and frequently the condition is not detected until autopsy, as occurred in all the cases on record up to 1909. When present the symptoms are of the same type as those found in any gastric disorder, consisting in epigastric discomfort, distension, and vomiting. The writers regard achylia as the most significant finding, and are of opinion that in combination with fresh blood and abundant mucus it should suggest the diagnosis of gastric polyposis. The most valuable diagnostic aid known is found in a properly interpreted skiagram which shows irregular defects in the margin of the gastric shadow at the site of the tumour. Some help may also be obtained from gastroscopy and examination of shreds from gastric washings. The treatment is entirely surgical. Owing to the tendency of these tumours to become malignant, as much of the tumour-bearing area as possible should be excised. Local infiltration with or without splanchnic block is the proper method of anæsthesia to employ.

[1] Surgery, Gynecology, and Obstetrics, November, 1926.

ST. PETER'S HOSPITAL.

IT is not very easy to collect money for small hospitals which deal with special complaints, and the difficulty is increased when the building is hidden away in some inconspicuous street. St. Peter's Hospital, though barely a hundred yards from the Strand, is so remote from the line of traffic that relatively few Londoners have even heard its name, and it is handicapped in any appeal to the general public by the special nature of its work. By its services to surgery, however, this hospital has deserved and won a reputation amongst medical men in all parts of the world. As a centre for teaching and for developing the technique of operations on the urogenital tract its name stands high—so high that when Sir John Thomson-Walker visited Canada recently he found that 60 per cent. of the many hundred practitioners whom he met had visited or taken courses at St. Peter's. The work on prostatectomy done by Sir Peter Freyer did much to bring the institution into prominence, and that this prominence is maintained is clear from the fact that every year 900 medical visitors come to examine its methods—to see the practice of a hospital with only 32 beds. For something like 40 years even these few beds have been supported with increasing strain, and nowadays at least three operable patients present themselves for every bed that is available. Although enlargement of a hospital does not necessarily mean improvement of its service, it is obvious that St. Peter's has a right to the support that will make extension possible. Nearly half the annual income is provided by the patients themselves, and the present appeal is especially for £50,000 required to enlarge the hospital by absorbing a line of shops, from which at present a considerable income is derived. Without any special public announcement some £5000 has already been raised by friends and sympathisers, and an attempt is now being made to interest a larger number of people. Some of our readers may, perhaps, have patients to whom the work of St. Peter's would particularly appeal.

TROPICAL MEDICINE AND THE LONDON SCHOOL.

THE study of tropical medicine becomes more important every year. As the commercial exploitation of tropical products widens, more and more Europeans find employment and settle, with their wives and children, in countries of exacting climates and strange indigenous diseases. Moreover, the demand for these products draws more and more natives from their villages and herds them into large settlements, where, unless skilled health administrators are at hand to discover and enforce the laws of hygiene, they become a prey to epidemics far more virulent than those of temperate countries. Much of the knowledge that makes life possible under these conditions has been gained by the London School of Hygiene and Tropical Medicine and its forerunners, and perhaps no body of research workers has contributed so much that is of immediate

vital importance. The work of this school is periodically reviewed in "Collected Addresses and Laboratory Studies," [1] the second volume of which, compiled by Prof. R. T. Leiper, has lately appeared. The rather dull title belies the contents. The laboratory studies are, of course, highly technical records, but the ordinary reader will find the book worth getting if only for the three addresses by Dr. Andrew Balfour, Director of the School. In the first of these, entitled Why Hygiene Pays, he reviews what has been achieved, and its value in the promotion of health in tropical dependencies. The second is called Some British and American Pioneers in Tropical Medicine and Hygiene, whilst the last and shortest, Some Landmarks in Tropical Medicine, points out the way by which the epidemic diseases of plague, yellow fever, filariasis, and cholera were fought and conquered. Of the laboratory studies not a few will interest others besides specialists in the particular subjects, which range from human entamœbiasis in temperate zones and the differentiation of food poisoning bacteria to Dr. P. A. Buxton's interesting inquiry—not strictly a laboratory study—into the causes of the depopulation of the Melanesian Islands. The volume also contains a description of the recent laying of the foundation-stone of the school's new home in Keppel-street. The annual report of the school, presented to the governors on Dec. 7th, states that progress with the building has been seriously delayed by the dispute in the coal industry, but it is hoped to put up all the steelwork within five or six months. In the meantime the number of students is increasing and the work of the Institute of Agricultural Parasitology continues to expand under Prof. Leiper's direction. The Ministry of Agriculture has converted its grant to the Institute into a block grant of £5000 a year. The question of the hospital at Endsleigh-gardens is still in abeyance, the Seamen's Hospital Society having announced its intention to maintain it for a limited period only, and the Minister of Health has appointed a committee, of which Sir Alfred Mond is chairman, to report on how the necessary clinical and pathological facilities can afterwards be secured to the School. The arrangements for financing the work of the School are incomplete and representations were made to H.M. Treasury as long ago as 1925 that the commitment of £25,000 a year entered into by the Government when the Rockefeller gift was accepted, would fall far short of the requirements for the staffing and upkeep when the School is fully established in the new building. The suggestion has been made that additional funds might be raised, in support of the Tropical Division of the School, from Colonial Government and commercial sources, so as to ease the burden on the Imperial Exchequer. The board is at present exploring this possibility.

THE POST-ENCEPHALITIS UNIT.

AT their meeting last Saturday the Metropolitan Asylums Board received a report on the first complete year's working of the post-encephalitis unit opened in the autumn of last year at the Northern Hospital, Winchmore Hill. This unit, consisting of four pavilions, each of 25 beds, was fully occupied almost from initiation. Its arrangement and intention were dealt with in a valuable report by the consulting neurologist, Dr. S. A. Kinnier Wilson, which appeared not long ago in the Board's annual report for 1925–26.[2] Dr. Wilson then enunciated the principles on which patients were admitted and the type of case in which improvement was likely to follow the measures employed, but he then warned the Board how diverse are the sequelæ of the disease, as diverse indeed as its phenomena, and he regarded the clinical material of the unit as likely always to be heterogeneous. Special investigation would be needed to decide to what extent behaviouristic defects and apparent changes in personality were in actual fact the outcome of the brain disease. Dr. G. A. Borthwick, medical superintendent of the Northern Hospital, in his report[3] on the first year's working, amplifies what Dr. Wilson has already set out, and states that the unit has not been productive so far of any very positive curative results. Its future value may be rather that of a clearing-house for cases suffering from any of the many residua of the disease, where they may be observed, classified, and allocated in various ways. For children showing psychic changes a period of residence at a hospital school should prove the best line of treatment, with release to their homes when their condition improved enough to justify it. The hospital school should also suit the children with Parkinsonian syndrome who, as a rule, presented little mental disturbance and were well behaved; the milder cases of this type could attend an ordinary special school for physical defectives. Patients showing excito-motor phenomena had not improved appreciably, despite treatment, and Dr. Borthwick thinks the slighter cases with little or no psychic change might be allowed to return home, leaving the bedrid cases in hospital or infirmary. The same policy would apply to cases with definite paralysis, for it is the experience of the unit that this shows no tendency to improve; nor have the cases of endocrine disturbance responded to treatment. Maniacal outbursts require transference to a mental hospital, where constant supervision is available; the mentally deficient class comes under the Mental Deficiency Act of 1913 in certified institutions. In hopelessly bedrid cases an apparently lifeless appearance may conceal remarkably good intelligence, and some provision for occupying their minds should be made. Dr. Borthwick recommends the continuance of the unit for at least another year, and in this the Infectious Hospitals Committee concurs. In an appendix to the report Dr. T. H. Whittington, visiting oculist, remarks on the number of children who showed a tendency to ocular divergence, a percentage of 37 taken all round. Many of the children had poor sight owing to errors of refraction, and five at least were found to have vision such as would make them quite unable to see any writing on the blackboard. Routine ocular examination is essential to make the best use of what powers of mental appreciation these children retain. At the end of the year under review there were 93 cases in the unit, 133 cases having been admitted and 40 discharged. Of these 12 were improved, 6 in such a condition that they were unlikely to improve by further treatment, 4 proved unsuitable for the unit, and 18 were taken away at the request of the parents. There was no death in the unit.

Lord D'Abernon has accepted the chairmanship of the Industrial Fatigue Research Board, to which he has been appointed by the Medical Research Council. Mr. William Graham, M.P., has relinquished the chairmanship of the Board under the pressure of other public work, but will remain a member of the Board.

[1] Collected Addresses and Laboratory Studies of the London School of Hygiene and Tropical Medicine. Vol. ii. 1926. Compiled by Prof. R. T. Leiper.

[2] THE LANCET, Sept. 4th, p. 512.

[3] From the Clerk to the Metropolitan Asylums Board, Embankment, London, E.C. 4.

CHELSEA CLINICAL SOCIETY.—The next meeting of this society will be held at the Florence Restaurant, Rupert-street, London, W., on Tuesday, Dec. 21st, at 8.30 P.M., when there will be a discussion on Septicæmia, in which Dr. A. P. Beddard, Dr. J. Freeman and Mr. J. E. McDonagh will take part. The meeting will be preceded by dinner at 7.30 P.M.

SOCIETY FOR THE STUDY OF INEBRIETY.—On Tuesday, Jan. 11th, 1927, at 4 P.M., at the rooms of the Medical Society of London, Chandos-street, Cavendish-square, W., Commissioner Adelaide Cox, of the Women's Social Service Department of the Salvation Army, will open a discussion on the Inebriate Woman. Members and associates are at liberty to introduce visitors.

Modern Technique in Treatment.

A Series of Special Articles, contributed by invitation, on the Treatment of Medical and Surgical Conditions.

CCII.

TREATMENT OF RAYNAUD'S DISEASE.

IF the arterial supply to a part is cut down the part becomes cold, but its colour depends upon whether the capillaries and venules are empty or engorged; in the former case the part is white (*local syncope*), in the latter case blue (*local asphyxia* or *cyanosis*). In the worst cases gangrene will result. Such, in brief, is the order of events when a normal part of the body, such as the hand, is exposed long enough to cold to produce frost bite; and the same series of changes occurs in the subject of Raynaud's disease as the result of but little exposure. The asphyxial and gangrenous fingers are very painful. Gangrene may supervene directly on the local syncope stage. Raynaud himself suggested that disturbed innervation of the capillary vessels was responsible, and recent work has fully brought out the fact that the capillaries are as important as the arterioles in altering the supply of blood to a part. A frequent subject of Raynaud's disease is a young woman who suffered from chilblains as a child, and as an adult is permanently afflicted with so-called "beef steak" hands. In long-standing cases of the disease the skin over the extremities becomes sclerodermatous, while the joints present features similar to those of rheumatoid arthritis. At the end of an attack the affected parts become abnormally hot and the patient complains of a feeling of pins and needles. In fact, a temporary erythromelalgia results. The clinical features characteristic of Raynaud's disease may be due to any cause which interferes with the arterial blood-supply, such as syphilitic arteritis or thrombo-angiitis obliterans. The trophic changes, often resulting in gangrene, that occur in syringomyelia must be distinguished. Local gangrene, which can hardly be confused with Raynaud's disease, is well known in malaria and in certain other fevers. Pathomimia, or multiple skin gangrene, and ergotism would be extremely rare sources of error in the diagnosis.

In Raynaud's disease proper there is no obvious cause for the obstruction; it has been attributed to vasomotor spasm. Occasionally the presence of a cervical rib or sarcoma of the spinal cord have produced a condition which is indistinguishable from Raynaud's disease, by causing irritation of those sympathetic fibres which function as the vasomotor nerves of the hands. Raynaud's disease has been observed to result from poisoning by arsenobenzol. That this disease is not merely a local affection of the hands and feet is shown by the facts that the ears and the tip of the nose occasionally become gangrenous and that associated changes may occur in other organs. The central nervous system may be affected in various ways. Temporary monoplegia, hemiplegia, paraplegia, and aphasia have been observed. Amblyopia has been shown to be due to a narrowing of the retinal arteries, while the veins are dilated and pulsating. Colic may be explained by similar changes in the wall of the alimentary canal.

General Measures.

Raynaud's disease is thus a general condition, and its manifestations are due to vasomotor disturbances in various parts of the body; sources of worry must be removed as far as possible; patients are often inclined to neurasthenia or hysteria; the general health of the patient must be improved if possible, and sources of local sepsis removed; he may be well advised to spend the winter in a warm country, such as Egypt. Syphilis, quite apart from its liability to produce arteritis, is recognised as a possible primary factor, and antisyphilitic measures should be adopted if there is any indication that syphilis is present in an active stage. Where the uric acid in the blood is high, treatment with one of the cinchophen compounds such as atophan, agotan, phenoquin, quinophan, should be considered, the usual dose being 15 gr. t.d.s. three days in each week, or atoquinol in doses of 4–8 gr., also t.d.s.

Einhorn's Duodenal Saline Treatment.—In his book on the duodenal tube, Einhorn states that the administration of large quantities of normal saline through a duodenal tube abolishes the clinical features of Raynaud's disease. I have confirmed this statement in several cases. The saline (0·85 per cent.) must be administered in sufficient quantity to produce fluid motions, should be boiled by way of sterilisation before use, and should be at body temperature when administered. The treatment is best carried out in the morning. A light breakfast may be allowed on waking. An ordinary stomach-tube or thin tube such as is employed for fractional test-meals or a long nasal tube may be used. It is unnecessary to make certain whether the tube has really passed into the duodenum; it is only necessary to see that the 28 inch-mark is at the level of the teeth and to get the patient to lie on his right side. Two pints of the saline are run in to begin with, and subsequently 1 pint every half hour until about 8 to 10 pints have been administered. The only precaution necessary is to make certain that the lungs remain clear, because it is possible to produce œdema of the lungs by this means. If the patient feels any discomfort from fullness during the administration less fluid must be given. This treatment may be carried out for four or five days in the week for a period of two or three weeks. In quite mild cases 2 pints of saline may be drunk in the morning.

It is of great interest to consider why this treatment is effective; the clue to this problem lies, I think, in an observation made by Sir Arbuthnot Lane, who removed the large intestine of a man with very bad Raynaud's disease. The case has been fully described by Mutch (*Brit. Jour. Surg.*, 1915, ii.. 608). For a number of weeks the symptoms completely disappeared, but they have since gradually returned. This suggests that there was something in the intestine that caused the condition, and this is borne out by the success obtained by Einhorn's treatment. The treatment is not a cure because the symptoms are apt to return, especially during the next spell of cold weather; but the patients I have treated have stated that their subsequent attacks have not been so bad.

Intravenous Injection of Radium Emanation in Normal Saline.—Another treatment just devised by Dr. Tominek, of Prague, of which I have no experience, attacks the disease at presumably the next stage—viz., by preventing the local action of the peripheral vasomotor nerves. He uses intravenous injections of radium emanation in normal saline. The dose is 2–3 millicuries, gradually increased to 15 millicuries. He suggests that the radium is antagonistic to adrenalin, which is responsible for the spasm.

Surgical Measures.

Surgical treatment of the disease would, naturally, only be considered in the most intractable cases. Two methods of procedure have been carried out.

(1) Leriche, in 1913, described the results he had obtained by removing the periarterial sympathetic fibres round the femoral artery, so that vasodilatation resulted, and the limb became warmer. Injection of alcohol round the artery is another method that has been used with the same object.

(2) Quite recently Davis and Kanavel, believing that the vasomotor fibres to the limb ran chiefly through the white rami into the spinal nerves, have removed the lower and middle sympathetic ganglia of the sympathetic chain of the neck. The lumbar sympathetic ganglia were removed by the lumbar or intra-abdominal routes when the legs were affected. They exclude, as far as they can, those cases where the vessel wall is diseased.

The first of these two surgical procedures has given good results in many hands. The operation has the advantage of being a relatively simple one. The method of Davis and Kanavel has only just been published, and very few cases have as yet been so treated.

Local Measures.

Since cold is, in most cases, the exciting cause of an attack of Raynaud's disease, it is important for the patient to wear appropriate clothing, especially in the winter time. More than the usual amount of underclothing is required in a bad case, and thick gloves made of a non-conducting material should be worn out of doors. They should not be tight enough to impede the circulation. Care must also be taken to keep the feet warm and free from damp. It is better to wear two pairs of thin socks, one over the other, than to wear a single pair of thick socks, because the air between the two layers acts as a non-conductor. Crêpe rubber soles on walking shoes are valuable in keeping out the wet.

Since heat as well as cold may bring on attacks, water for washing should be approximately at blood heat. An attack may sometimes be avoided in a young and vigorous subject by getting him to take a sharp walk, and by friction of the hands. Severe cases should stay at home in a warm room in cold weather. Friction of the hands is valuable, but if they are too painful for this it is still of value to rub the parts in the neighbourhood. Friction may also be combined with hydrotherapeutic methods, such as alternate hot and cold douches to the hands and feet.

In applying galvanic electricity the hands or feet should be put in warm salt water, and the negative pole placed in the bath. The positive pole is either applied directly to an unaffected part higher up, or to the neck, if both hands are affected, and in the bath. The strongest current that the patient can bear should be passed, and it should be frequently reversed. The patient should make voluntary movements of the hands under the water, and the treatment should be continued until the part becomes red. Finally the limbs are dried and well rubbed. High frequency and diathermy may also be of value.

Where gangrene has set in the parts must be treated on surgical principles. Since the gangrene is dry there is not much fear of infection, and dry dressings of boric lint or unmedicated sterile dressings should be employed. The hand may be kept for a time in a sling, and splints may be required. An oxygen bath, made by placing the limb in a wide mouthed rubber bag and filling it with oxygen, is a valuable method of treatment, not sufficiently employed. The mouth of the bag must be bound airtight on to the limb above the affected part. Amputation should never be carried out unless the whole end of the limb is becoming gangrenous. At most, bits of dead tissue may be snipped away with scissors. It is remarkable what good results are obtained with conservative measures, even when a part would appear to be extensively gangrenous.

Drugs.—Iodine or thyroid—the tolerance to thyroid is often great—nitrites, and nitro-glycerine may be administered. Ung. meth. salicylate, linimentum belladonnæ, and iodex may be applied externally. Warm fomentations—not too hot—are also of value. Where there is much pain it has long been customary to add opium to the fomentation.

Conclusion.

To sum up, in the milder cases simple local measures, such as rubbing the hands, bathing them alternately with hot and cold water, and wearing gloves, accompanied by large draughts of normal saline in the early morning, may be successful; but in the more severe cases, especially when gangrene threatens, the complete Einhorn treatment should certainly be adopted, and the oxygen bath used as a local measure.

E. P. POULTON, M.D. Oxf., F.R.C.P. Lond.,
Physician to Guy's Hospital.

Special Articles.

PROBLEMS OF MENTAL DEFICIENCY.

CONFERENCE OF THE CENTRAL ASSOCIATION FOR MENTAL WELFARE, DEC. 2ND–3RD, 1926.

(*Concluded from p. 1236.*)

AT the afternoon session on Friday, Dec. 3rd, Sir ARCHIBALD BODKIN took the chair and opened a discussion on

ENCEPHALITIS LETHARGICA AND ITS AFTER-EFFECTS.

He said that the importance of this mysterious disease could not be exaggerated. Not infrequently individuals suffering from its after-effects came into conflict with the law. It was clearly necessary that the law should be well defined, based upon well-known rules and administrable, but when it dealt with responsibility its hard and inelastic principles should be qualified so as to march level with the advance of skilled medical knowledge. He thought that the provisions of the Bill now before the House would help magistrates to deal with these cases more properly and more humanely.

Dr. A. F. TREDGOLD confined his remarks to the mental and social aspects of the disease. He quoted the official figures, showing that encephalitis was a prevalent disease; 5039 cases were notified in 1924 and 2635 in 1925, and undoubtedly many cases went unrecognised owing to the extreme diversity of clinical signs and the wide variations in severity. He had known cases reasonably diagnosed as influenza, cerebral tumour or hæmorrhage, chorea, epilepsy, hysteria, melancholia, confusional insanity, sunstroke, infantile paralysis, myasthenia gravis, multiple neuritis, and appendicitis. The disease might bring the patient into a grave condition in a few moments or never show any serious symptoms at all. Yet the mildest cases might be followed by the gravest physical and mental changes, including Parkinsonism, various forms of paralysis, and mental changes with or without delinquency. Statistics relating to the proportion of patients suffering from mental disorder during the acute stage, or as sequelæ to the illness, were very imperfect. The Board of Control had cognisance of 200 cases at the end of 1925; about half of these were below the age of 20, and about one-half of them remained unimproved. Many more cases were dealt with in Poor-law institutions. In the County of London alone there were hundreds of school-children whose mental functions had been seriously affected.

Delinquency.

There was abundant evidence that delinquency occurred in a large number of patients, much more in children than in adults. There might be little intellectual impairment beyond a weakness of memory and attention, but the whole disposition and moral nature were profoundly altered. The patient seemed to have lost all self-respect, wisdom, and moral sense. A child whose behaviour had previously been irreproachable would become a veritable little fiend. Many of them were indistinguishable from moral imbeciles. In a few cases the function of control was chiefly affected, and the child knew and felt he had done wrong, but was unable to stop his acts. The change might supervene immediately on the acute stage of the illness or after an interval of some months.

Pathological Basis.

There were certain marked changes found post mortem. The blood-vessels of the meninges, the grey matter, and the basal ganglia were engorged, and often there were many small hæmorrhages into membranes and brain-tissue and calcification of the vessel walls. Œdema was marked, sometimes so

extensive as to "waterlog" the whole brain. The nerve-cells were in various stages of disintegration, and clearly could not function properly. Where the frontal area was waterlogged lethargy would result; if the œdema were less severe there would be mental confusion, disorientation, false ideas, and excitement. When an impairment of function of the cells remained after the acute attack the result was varying degrees of intellectual weakness, loss of control, alteration of character, and misconduct. The type of lesion left by the encephalitis, the inherent nature of the child, and the extent to which it had acquired control over its innate antisocial propensities through training and home environment, were all factors which determined the form of the mental after-result. There was evidence that some cases gradually recovered, but in a considerable proportion the sequelæ would probably be permanent.

Mental Defect and Encephalitis.

It was wise to allow a reasonable time for improvement before certifying under the Act, and this raised a very important administrative problem. Only a few could be sent to special schools, and there were many in urgent need of special establishments, such as the one recently started by the M.A.B. Prison was worse than the asylum or the institution for defectives. Provision should also be made for investigation and report before sentence upon such cases when they came before the courts.

Dr. F. C. SHRUBSALL related the symptoms and history of the present epidemic, and estimated the proportion of cases in which sequelæ occurred as roughly 30 per cent. of those notified. Out of 193 cases which had been followed up in London, 48 showed impairment of sleep, 24 had paralysis, 22 had twitchings, tremors or fits, 12 had ocular symptoms such as squint, 47 showed impairment of intelligence, and 96 changes of conduct. He emphasised the danger to the public, and the necessity in all cases of encephalitis, whether epidemic or not, of taking immediate action to secure careful treatment and to avoid any irritation due to clashing of personality in the home. The stage of irritation and lack of concentration demanded considerateness combined with uniform and consistent control. Parents were only too liable to overlook this phase and let the child discover that he could get what he wanted by rebellious conduct. Directly the acute phase was over, parents might pet the child overmuch and laugh at fits of petulance; a little later they would chide him severely for just the same thing. The child unconsciously resented this change, and so on a basis of increased irritability there would be built up a superstructure of neurosis. Usually mental deterioration and growth went on simultaneously, so that the only obvious sign at first would be the slowing down of the rate of growth, coupled with return to a more infantile form of emotional reaction. As a rule some mental faculties were considerably retarded or disordered, while others were little affected, so that there was great variability. In adults the mental disorder was more obvious. Medico-legally the position of the post-encephalitic, in relation to responsibility, more closely resembled that of the insane than that of the ament. To him the excuse of "irresistible impulse" might be more justly applied than to any other class of persons. In some cases they could foresee the consequences of their act, but simply did not wait to reflect; in others they made no effort to control their actions. They wished to occupy the centre of the stage at all costs. Many of them reacted satisfactorily to steady discipline. He regarded encephalitis lethargica as one variety of some general underlying disease of which epidemic influenza might be another type, the same causes leading to both. Possibly the same infective agent could cause different symptoms in other individuals, just as, conversely, encephalitis could be caused by many different infections. The post-encephalitic moral delinquency resembled what happened to everyone after a bad cold: they were like "bears with a sore head," but for some hours only.

Discussion.

Dr. E. MAPOTHER said that to offer a woman a lifelong separation from her husband and children was not an ideal solution. Many encephalitic patients had committed suicide, and a number of them might have been saved by encouragement. Among the many difficulties that beset the whole problem were the obscurity of the onset of the disease, and the lateness of the onset of the sequelæ. Diplopia was becoming less common as a characteristic feature, and the attack less easy to identify. Symptoms, in his opinion, might appear up to four or five years after the first attack. The appropriate use of existing arrangements was more likely to solve the problem than special institutions, which could not be properly adapted to deal with all the varied sequelæ. Encephalitics needed the same measure as mental patients—the voluntary admission into mental hospitals. It was difficult to get them sent there, because to regard an individual as a mental case a magistrate wanted evidence of disorder of intellect, which was exactly what these cases did not show. Our ideas on criminal responsibility needed revision, and would not obtain it until every first offender was seen by a doctor before sentence.

Dr. W. R. K. WATSON said that the marked case of encephalitis was not responsible for his acts, but there were all degrees up to complete responsibility, and it was very hard to know where to draw the line.

Mr. J. W. FLINT and Mrs. A. L. SHAVE pleaded for special accommodation for these cases, to save them from the stigma of being certified and removed to institutions under the Lunacy or Mental Deficiency Acts.

Mr. R. W. BLACKIE said that only one of the many cases before the Birmingham magistrates had been certified under the Mental Deficiency Acts, and none had been put in prison. He asked if these children could not be specially earmarked and watched when in mental deficiency institutions, with a view to liberation after a few years.

Dr. E. H. T. NASH spoke of the difficulty of diagnosis, and pointed out that the severity of the acute stage was no criterion of the severity of the sequelæ.

Dr. F. D. TURNER assured the meeting that there was no danger of post-encephalitic cases being wrongly retained in mental deficiency institutions, emphasising the fact that these children are "possessed of the devil." He suggested that they were probably best in ones and twos amongst other children, and not massed in a special institution. He had found that they often deteriorated physically as they improved in conduct.

Dr. TREDGOLD agreed with Dr. Turner that post-encephalitic cases earmarked themselves, and repudiated the suggestion that they could ever be herded unclassified for life in a modern mental deficiency institution.

POST CERTIFICATE SCHOOL FOR MIDWIVES.—Mr. Neville Chamberlain has consented to open the new building in connexion with the Post Certificate School in Camberwell on Feb. 8th, 1927.

THE Papworth Press, Cambridge, announce the forthcoming publication of "The Significance of Temperature Variations in Tuberculous Disease," which is, according to the subtitle, a study in continuous and quasi-continuous temperature records of man and animals in health and disease. The book is a reissue of papers which have appeared in THE LANCET under the signatures of the late Sir G. Sims Woodhead and Dr. P. C. Varrier-Jones, together with the results of Dr. Varrier-Jones's further experiences at Papworth. It is unique in that it has been printed and bound, and will be published by, the consumptive ex-patients in the printing department of the Papworth Village Settlement.

REOPENING OF THE WELLCOME MEDICAL RESEARCH BUREAU.

RESEARCH AND CITIZENSHIP.

ON Dec. 8th Mr. Neville Chamberlain, the Minister of Health, reopened the Wellcome Bureau of Scientific Research, which has been reconstructed and enlarged. The building is in Endsleigh-gardens, London, N.W., and offers excellent facilities both for research and instruction. Individual workers who wish to follow any particular line of investigation are given accommodation and help in their studies, whilst an immense amount of information is made available to the medical and allied professions by means of a specialised reference library and a comprehensive museum.

The Bureau was founded in 1913 by Mr. Henry Wellcome, and is affiliated to the other institutions in London which bear his name. It contains 12 research laboratories, whereinvestigations may be made in all branches of pathology and parasitology, but especially in tropical medicine and hygiene. The Museum, which is arranged in 20 small halls, aims at a general survey of disease, and is open to all medical men and students, and also to laymen introduced by a registered medical practitioner. Teachers are invited to make full use of it for purposes of demonstration, and arrangements can be made for them to bring classes of students. Much of the success of the exhibition, as Dr. S. H. Daukes, the Director, points out, is due to the coöperation of medical men in various parts of the world, and it is hoped that their help will continue so that the Museum may become even more complete.

WELLCOME MUSEUM OF MEDICAL SCIENCE. [*Copyright.*

Owing to the unavoidable absence of Mr. Wellcome in America, the proceedings were opened by Dr. C. M. Wenyon, Director-in-Chief of the Bureau, who introduced Mr. Chamberlain. In formally declaring the Bureau and Museum reopened, Mr. Chamberlain referred to the extraordinary acceleration of medical progress in comparatively recent times. The reason of this acceleration, he said, could perhaps be found in the fact that knowledge was now so rapidly spread from one part of the world to another. In the old days a new discovery seldom reached much beyond the immediate environment in which it was made, but to-day every advance was immediately registered and imparted to everyone who was interested throughout the world.

The Museum which he was to reopen, continued Mr. Chamberlain, was of unique and remarkable character. The labour brought by Mr. Wellcome to its perfection must have been inspired by a belief in research and education as the two greatest factors in helping mankind to overcome their infirmities. It was over 30 years since the Research Laboratory in Physiology was founded, and that had been followed by the Laboratory of Chemical Research. Much more recently Mr. Wellcome had instituted the Entomological Field Laboratory, and now all these various institutions, together with the Historical Medical Museum, were affiliated to the Medical Research Bureau.

This building, then, was the headquarters of the whole system of scientific research in which Mr. Wellcome had interested himself, and contained, also, the means of spreading and promoting education amongst students and teachers. The method of instruction adopted was pictorial, and the drawings, paintings, photographs, models, and actual specimens must present a picture of a vividness and impressiveness which perhaps could not be excelled by any other method of demonstration. The collection was, he thought, unparalleled in any medical school — certainly in this country, and probably in the world. It dealt not merely with the diseases of temperate climates, but also with those of the tropics, and exhibited their causes, symptoms, treatment, and prevention with a completeness which was altogether unexampled. If, indeed, the great advances in medicine and surgery were largely due to the spread of knowledge from the one to the many, then everybody must agree that Mr. Wellcome was a great public benefactor in making available this epitome of all that science had hitherto achieved in this domain.

Sir Walter Fletcher, F.R.S., Secretary of the Medical Research Council, then delivered an address on Research and Citizenship, in the course of which he said that the Bureau and its associated laboratories, considered as a single organisation, had already taken its place as one of the important centres of medical research work in this country. Almost from its beginning original and fruitful scientific investigations had been conducted within its laboratories, and the results had been freely published in the technical scientific journals. This successful work, past and present, was due to the able men who by aid

of this organisation had found their opportunities. To his mind the special interest of the Wellcome organisation, looking at it from a national point of view, was its origin and the particular mode of its financial support. They illustrated some real problems of the economics of research work and of its place in national life. For research it was necessary to have leisure and materials. The history of scientific research, as known to-day, had been worked out in highly organised capitalistic communities. In this and other countries it had, in fact, depended during the past centuries not upon any enlightened and far-sighted support given to it by the general community, but upon the accidents of the distribution of wealth—upon private patronage, upon the endowments of universities, and sometimes upon the personal possession of wealth by the investigator. The nineteenth century had come and gone without making much change in this system of *laissez faire*—in spite of the great wealth of the country and the rise and development of industries which had owed their very existence to science. Accident was allowed to decide whether the right conditions should be found for investigation, and when discoveries turned up they were only slowly utilised. The land-owning and governing class showed what Gibbon described as "the proud ignorance so dear to a polished people." The new rich grasped at the immediate opportunities of wealth and became practical men who, as Disraeli reminded them, were practical in that they practised the mistakes of their ancestors.

As the present century opened, continued Sir Walter Fletcher, our relative decline in trade, and the capture by other countries of industries native here, had begun to teach the lesson—a lesson driven home during the war. This first quarter of the new century had seen great changes, and during the same period the great manufacturing firms had increasingly realised that not only their success but their existence depended upon the progressive work of discovery and its application. The manner in which business firms established and used their research departments varied very widely. Commercial enterprises had forwarded the development of scientific work in three ways: (1) Private fortunes made in commerce had sometimes, though far more rarely than might be expected, been devoted to the support of research work. (2) Commercial profits might be used to promote research; the firm might directly support scientific research work relevant to the objects of the business, the results gained being exploited for private interests. This kind of work was not likely to encourage fundamental discoveries or to attract and keep men capable of making them. Lastly (3), a few firms had adopted the plan of supporting scientific work and leaving their workers as free to follow their own line and to publish their results as men in any University laboratory. This method was not exclusive of the former method, and might be additional to it. The Wellcome Bureau and laboratories were supported under this system, and the firm which controlled them might take legitimate pride in the results given to the world.

Going on to speak of the Museum and Library, Sir Walter Fletcher described them as forming together a sumptuously illustrated text-book. In chosen parts of the subject a student might learn more from a quiet hour in one of its divisions than he was likely to gain from any ordinary formal lecture of the schools. The Museum also had a large usefulness for the instruction of intelligent laymen. A former Minister of the Crown, now in high administrative office overseas, had told him that a visit paid to the Museum had given him his first really vivid impression of what scientific work had done and might still do for the peoples of our Empire. It had aroused for the first time his enduring sympathy and interest. The work of science could only have its full effect in the welfare of the people by the steady growth among the general body of citizens of sympathy with its methods and faith in its powers. It ought to be a proper part of citizenship to understand something of the difficult path the pioneer investigator had to follow, and to see something of the processes by which a discovery came into practical application. Only the dull or uninformed could enjoy material benefits without caring to know anything of the paths by which they had come and of the hands that gave them. Such knowledge, in one field of science, was made easy of reach by a Museum like this. Material benefits, however, did not form the highest gain received by the pursuit of natural knowledge. The work of the Bureau, Laboratories and Museum was twofold—that of increasing "God's honour and bettering man's estate."

At the conclusion of the address, Sir John Rose Bradford, President of the Royal College of Physicians of London, proposed a vote of thanks to Mr. Chamberlain and Sir Walter Fletcher. This was seconded by Sir John Bland-Sutton, Past-President of the Royal College of Surgeons of England, and was carried with acclamation. Sir James Kingston Fowler proposed a vote of thanks to the Founder, which was seconded by Prof. T. R. Elliott, and in Mr. Wellcome's absence was acknowledged by Dr. Wenyon.

MEDICINE AND THE LAW.

Colonel Kynaston's Appeal: Remarkable Sequel.

THE prosecution of Lieut.-Colonel Kynaston, R.A.M.C. (retired) under the Dangerous Drugs Act, 1925, has had a sequel which must be almost unique. The Act of 1925, it appears, is not yet in operation, and, presumably, other persons who have been convicted thereunder will now be relieved of the penalties imposed upon them. Lieut.-Colonel Kynaston, it will be recalled, was lately convicted at the Central Criminal Court of aiding and abetting a patient (whom he was treating for catarrh) to obtain medicinal opium contrary to the Act (the accused being no longer a registered practitioner). His defence, so far as a newspaper summary gives a fair indication, consisted of two main points; one of these was irrelevant and the other was wrong as a matter of law. His irrelevant point was that his name had been wrongly erased from the Medical Register and that he was unjustifiably deprived of his qualifying degrees by the colleges which had conferred them. His other main point was that he was still qualified if not still registered, and that thus, if the enactment under which he was prosecuted used the words "duly qualified medical practitioner," he was still within its terms. This contention was untenable in law because Section 34 of the Medical Act of 1858 makes it clear that the words "legally qualified" or "duly qualified" medical practitioner, if used in any Act of Parliament, mean a practitioner registered under the Medical Act. Colonel Kynaston, having been fined £10, took his case to the Court of Criminal Appeal, where he raised various points which, apparently, left the judges unmoved. Then there was a dramatic surprise. Counsel for the prosecution got up and announced that he had just discovered that the 1925 Act was not yet in force. It was (under Subsection (3) of Section 7) to operate on such date as His Majesty should by Order in Council appoint. No Order in Council had ever been made, and counsel's effort to support the conviction as justified under the previous law was not permitted by the court. The Lord Chief Justice made some pleasant observations upon the ludicrous situation thus disclosed, and the case terminated inevitably with the quashing of the conviction. Lord Hewart stated that the appeal had no real merits, but, as the Act under which the prosecution had been conducted was not in force, the proceedings "resembled nothing so much as pulling a bell-handle without a bell at the other end."

The incident illustrates the danger of the modern practice—otherwise found so convenient—of putting masses of legislation on the statute-book with a postponement clause by which a particular enactment does not take effect until the administrative arrangements

are complete and until the Privy Council or some other authority presses the button. Neither side comes out of the case with much credit. The Home Office has stultified itself in a manner unparalleled in that otherwise so shrewd and careful Department of State. Colonel Kynaston escapes on a point which was, presumably, as great a surprise to himself as to everyone else. His offence against the Dangerous Drugs Acts—as has previously been stated in this column—was trivial in the extreme; but the quashing of his conviction still leaves him exposed to the charge of signing a prescription with a claim to degrees which he no longer possesses.

Milk Bottles Filled in Street.

Fines of 20*s.* each were inflicted by the Brighton justices on Dec. 9th on a milk roundsman and his employer, the former for delivering bottles which had not been filled and closed on registered premises, and the latter for aiding and abetting, or alternatively delivering the milk by his agent. The 1926 Order, under which the proceedings were taken, makes it illegal to fill bottles in the street. In this case Dr. Duncan Forbes, medical officer of health for Brighton, saw the milk roundsman filling bottles in the early morning from a can and capping them with caps which he took from his pocket. The pocket was convenient for holding the caps, he said, when questioned. The man's employer said that so far as he was aware all the bottles were filled before they left the dairy, and that the regulations had been explained to all his employees.

At a session of the Bombay Medical Council held on Sept. 20th the name of Mr. Joseph Michael Pereira, M.B., C.M. Edin., 1894, was erased from the Register, following the Council's decision that he had been guilty of infamous conduct in a professional respect by issuing sick certificates in a case in which he had not been in personal attendance on the patient during the period covered by the certificates. At the same time a practitioner holding Indian qualifications received similar sentence under the Bombay Medical Council. Mr. Pereira's name, it would seem, has not appeared on the Register of the General Medical Council of the United Kingdom.

The Home Secretary gives notice that he has withdrawn from Mr. Frank Allday, L.D.S., of 26, Charing Cross-road, W.C., the authorisation to be in possession of dangerous drugs or to supply them on prescription.

PARIS.

(FROM OUR OWN CORRESPONDENTS.)

Infantile Mortality in Hospitals.

THE high death-rate amongst babies in French hospitals—it has been estimated at 35 per cent.—can be accounted for in several ways. The children come to hospital in so bad a condition that they often die in the first five days after admission. For the most part they are under-nourished and have been bottle-fed; furthermore, they are taken away from their mothers. Naturally enough the mortality amongst those who come into hospital with their mothers and are breast-fed is not so high—perhaps about 26 per cent. Infants stand badly a long stay in hospital, and often end by taking some infection or by wasting away. With the idea of reducing this mortality, Dr. C. Lesné advises that as far as possible children should not be taken into hospital; that more clinics for infants should be set up; and that babies should be treated more at home, assistance being given to the mother by visiting nurses. For those acutely and dangerously ill and those who are quite incurable, treatment in hospital is necessary. There should, however, be more wards into which the mother can be admitted with her child, and wet nurses ought to be provided for those who cannot get their mother's milk. Every child, says Dr. Lesné, should be kept strictly isolated, and there should be a specialist staff large enough and skilful enough to take the necessary precautions against spreading infection from one child to another. The stay in hospital should be as short as possible, and it is wise to have a convalescent home in the suburbs where babies can go if their health is still too precarious for them to be sent out into the country.

Sarcoma of the Œsophagus.

Compared with epithelioma, sarcoma of the œsophagus is a rarity, and it is quite exceptional to be able to diagnose the condition during life. Dr. Guisez, of Paris, reports the case of a man of 54 who had a tumour of the middle third of the œsophagus which caused more or less complete stenosis. Microscopical examination of a portion of the growth removed at œsophagoscopy showed that it was a spindle-celled sarcoma. Radium was applied locally and the tumour rapidly disappeared, so that the patient was able to swallow normally for a period of ten months, after which, however, the sarcoma recurred lower down, and proved less amenable to radium than before.

Dangers of the Geyser.

Dr. Georges Luys has been pointing out the risks of using gas geysers in bath-rooms. There are, he says, two dangers: First, the high content of carbon monoxide in illuminating gas, and secondly, the possibility that products of combustion may escape into the room without being noticed. The geysers may apparently be working well; they produce hot water; there is no smell of gas; yet, nevertheless, a flue may be blocked. It is thus absolutely necessary that geysers should often be inspected to see that they are working properly and that the fumes can escape through the proper channels.

Arsenic and Grapes.

Prof. E. Ledoux, of Besançon, has recently reported some cases of arsenical poisoning due to drinking wine made from grapes which had been treated with insecticide made from arseniate of lead. Care had not been taken to comply with the regulations which forbid powdering of the vines with arsenicals after they have flowered, and the wine in question contained a large amount of arsenic.

Hospital Risks.

No provision is made against occupational risks—infections, accidents, and disease—incurred by the staff in hospitals administered by the French Government. Prof. Mougeot, charged with the duty of examining the matter anew, has reported that all efforts made as yet for obtaining just compensation for accidents have wholly failed, and advises that special legislation should be secured at once.

Observations on the Duodenum.

Dr. Maurice Delort, of Paris, has lately drawn the attention of the Society of Medicine to a special method of radiological examination of a loop of intestine between two points of compression. His work has been done on the normal duodenum. The method consists of stopping, or rather slowing, the flow of duodenal contents by compressing the duodeno-jejunal junction by means of a special abdominal belt fitted with pneumatic pads. Dr. Delort was able to show clear pictures of the distended duodenum, and his technique appears to give the observer an improved chance of drawing conclusions about the condition of the viscus.

Barbituric Derivatives.

Kohn-Abrest and Pissot have reported on an investigation of veronal and other members of the barbituric group of analgesic and hypnotic substances. The toxicity of these compounds, they point out, varies considerably, and depends mainly upon renal function. Veronal, for example, may be given safely in doses reaching 14 g., provided the kidney be perfectly sound, but where renal function is impaired, doses of less than 1 g. may be very dangerous. In determining whether the quantity of veronal and

similar compounds found post mortem suffices to explain why death has taken place, the general state of the patient—and especially the renal condition—must be carefully considered.

The Milk Supply.

The French National Society for encouraging agriculture is proposing to form a committee for improving dairy products and for securing effective inspection of dairies, byres, and establishments. Producers willing to permit inspection will be entitled to obtain higher prices for the milk sold under sanction of the society and also of the Ministry of Agriculture. This plan resembles very closely the plan under which so-called certified milk is marketed in the United States.

The *Syndicat*, or union of French Surgeons, has decided that patients able to pay for surgical services ought not to have free hospital treatment and care, and are drawing up a tariff of fees. They consider that surgeons should be paid directly and without intermediate official relations.

The French Ministry of Labour and Hygiene is investigating the manufacture and handling of radio-active substances so as to devise measures fof protecting those engaged in certain industries.

A centre for mental prophylaxis in childhood, directed by Prof. Roubinovitch, has been established at Vanves, near Paris. Post-graduate classes will be held at the centre.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

Synthaline.

AT a recent meeting of the German Society for Diseases of the Digestive Organs and Metabolism Dr. Frank, of Breslau, reported on a derivative of guanidine, called synthaline, which has been shown to produce hypoglycæmia. Its effect is slower than that of insulin, but of a longer duration because of the cumulative action of guanidine. The advantage of the preparation is that it may be administered by the mouth; the drawback is that the appetite suffers and that sometimes the drug causes vomiting and diarrhœa, though never in a dangerous form. Severe cases of diabetes, especially those in which coma is threatening or the patient is actually comatose, will, as before, belong to the domain of insulin, though by giving synthaline along with it the number of injections may be lessened. Prof. Richter, of Berlin, confirmed the results obtained by Dr. Frank by his experience in 25 patients, and so did Prof. Umber and Prof. Strauss.

Iodised Salt and the Prevention of Goitre.

In Switzerland the administration of iodised salt has proved very useful in the prophylaxis of goitre, and some good results of its adoption in Germany have now been described by Dr. Sepp, a medical man residing in a goitre district in Upper Bavaria. He found that in the local sick club the sick-rate from all causes was little affected by the use of iodine, varying only from 286 to 234 cases a month, but the figures for goitre showed considerable reduction. In the period between the first quarter of 1923 and the third quarter of 1924, 320 of 1789 patients suffered from goitre, whilst in the period between the fourth quarter of 1924 (when the salt was first introduced) and the second quarter of 1926 only 87 of 1743 patients had goitre. The constant decrease is indicated by the fact that in the last quarter of 1923 22·6 per cent. of all the club patients suffered from goitre, whereas this percentage had fallen in the last quarter of 1924 to 7·2 and in the second quarter of 1926 to 3. No case of thyroidism occurred in club patients, as they did not take more iodine than the doses supplied to them, but a number of cases were observed in private practice where patients had, at their own expense, indiscriminately swallowed larger doses of the compound.

Public Health Services.

DOCTOR REFUSES SCHOOL CERTIFICATE.

A CASE of some interest to practitioners has recently been reported in the *Wolverhampton Express*. A parent was summoned by the local education authority for not sending a child regularly to school, and called, as a witness for the defence, the doctor who was attending the child. The doctor is reported to have said that the child had been suffering from pneumonia and whooping-cough, and later had had an operation for the removal of tonsils and adenoids; he had refused on principle, however, to sign a certificate, as, since education was compulsory, he did not see why parents should be forced to pay for a medical certificate. In making this apparently reasonable objection, the doctor does not seem to have taken into account the legal position of the local education authority. Section 42 of the Education Act, 1921, enacts that it is the duty of the parent of every child to cause the child to receive efficient instruction in educational subjects, and Section 43 states that it is the duty of the local education authority to see that this duty is performed by the parent. The onus for presenting the child at school rests, therefore, on the parent, and in the event of a child not attending school the parent must convince the local education authority that his consent for the non-attendance of the child has been reasonably withheld with the bona fide intention of benefiting the child. The most effective proof of bona fides that a parent can produce is a medical certificate of unfitness.

Although the statutory obligation of the authority is clear, action is not taken without sufficient cause, such as the prolonged absence of a child from school and the repeated refusal of a parent to produce a medical certificate or to present the child for examination by the authority's medical officer. In this case the authority's representative, in the person of the attendance officer, had called eleven times at the child's home, and no proof of the child's unfitness to attend school was produced. The authority, therefore, could hardly do otherwise than have the case settled in court.

REPORTS OF MEDICAL OFFICERS OF HEALTH.

THE following are some of the statistics for 1925 of three cities:—

Name of city.	Estimated mid-year population (R.-G.).	Birth-rate.	Death-rates per 1000 of the population.					Death-rates per 1000 births.	
			All causes.	Tuberculosis.	Cancer.	Resp. diseases with influenza.	Heart disease.	Infant mortality.	Maternal mort. from childbirth.
Sheffield ..	526,900	17·7	11·5	0·99	1·32	2·3	1·5	84	4·9
Hull	297,300	21·8	13·2	1·26	1·16	2·9	1·2	93	4·8
Cardiff ..	227,300	20·6	12·8	1·53	1·09	2·3	1·7	92	4·5

Sheffield.

Dr. F. E. Wynne records an outbreak of small-pox during the last quarter of the year, which originated with two unvaccinated boys who contracted the infection while staying in Middlesbrough. Both boys had mild attacks, for which no doctor was called in, and which were regarded as chicken-pox. One of them returned to school, and other cases arose at the school. There were 44 cases up to Dec. 31st, all traceable to the two original ones. (The patients were none of them protected by vaccination—i.e., they were either unvaccinated or adults vaccinated in infancy only.) Although up to the end of the year there were no fatal cases, several of the victims were

dangerously ill, and will be scarred and disfigured for life. This, says Dr. Wynne, disposes of the theory that the mild type of small-pox is a new disease and always breeds true. Referring to the exceptional industrial depression and unemployment, Dr. Wynne points out that there has been no set-back in the public health, and attributes this to the much better organisation of relief under modern conditions. He thinks, however, that if in the immediate future there is a general resumption of employment there will be an unheard-of loss of time and wages as the result of industrial fatigue among men who are out of training, and this will be reflected in the sickness-rate of the country during the first period of resumption.

The Sheffield system of sewerage disposal by bio-aeration, devised by Mr. Haworth, is being extended. Five years ago there was only an experimental tank in operation. Now 8 to 10 million gallons of sewage are being treated daily.

There was a fall in the notification of encephalitis lethargica after the severe outbreak of 1924, when there were 337 notifications and 40 deaths. The notifications in 1925 numbered 54 and the deaths 21. During 1925 Sheffield had the lowest death-rate from pulmonary tuberculosis of any of the 17 provincial towns with populations exceeding 200,000, and for all tuberculosis it was a close second to Bradford. Dr. Wynne thinks that the silicosis regulations have done much to reduce the mortality in the various classes of grinding and abrasive industries. Nevertheless, he would like to see the abolition of the little, dark, insanitary "wheels," and the substitution of well-equipped large factories. During the year ending March 31st, 1926, the number of houses completed was the largest in any year since the war—namely, 2178, of which 1361 were erected by the corporation. The overcrowding in the city is still deplorable, and there is a waiting list of 2822 for municipal houses. The scheme for the conversion of privies into water-closets made unusually rapid progress. Nearly 2000 were converted.

Dr. John Rennie, the chief tuberculosis officer, reports that the dispensary is being well used by the medical profession for diagnostic purposes. In over 70 per cent. of the notified cases the patients were sent to the dispensary prior to notification. Thus a large proportion of cases are being discovered at an early stage. The X ray apparatus has proved invaluable, and 1726 skigrams were made during the year. There were 1356 contacts examined. The names of all children of school age who are known to have been exposed to infection in their homes are supplied to the school medical officer, in order that they may be kept under observation during their school-life. In six cases tubercle bacilli were found in the sputum of school-children. The surgical tuberculosis officer, Dr. C. Lee Pattison, gives a table showing that out of 104 deaths from non-pulmonary tuberculosis 46 were due to meningitis, 21 to intestinal tuberculosis, 10 to spinal disease, and only 4 to disease of other bones and joints. Dr. Pattison also reports that the cases are being brought under treatment at an earlier stage. Thus, as superintendent of the Rivelie Hospital (run on the same lines as Alton), he finds that the average duration of stay was only 324 days as compared with over 700 days during 1919 and 1920. Also during the first few years after this hospital was opened there were always about 50 patients waiting for admission, whereas now 30 of the 130 beds are not needed for Sheffield children, but are used, with the sanction of the Ministry of Health, for children from outside areas. Dr. Pattison finds that ultra-violet light treatment causes definite improvement in enlarged cervical glands, and that most cases of lupus show improvement, some of them to a very marked extent. Selected cases of bone and joint disease improved "but in many the cure of the patients did not advance more rapidly than that of those treated by other methods."

The veterinary inspector, Mr. J. S. Lloyd, reports that of 909 samples of mixed milk coming in to the city by road or rail 91, or 10 per cent., were tuberculous. In following up the samples 100 farms were visited. At 57 of these farms 59 tuberculous udders were found. At the remaining 43 farms no tuberculous udders were found, and the subsequent control samples of the mixed milk proved to be negative. In most of these 43 farms cows had been sold during the period of waiting for the result of the biological test. Within the city there are 2539 stalls for milch cows, and in these stalls 20 cows with tuberculous udders were found during the year. Only three of the tuberculous cows were lost sight of, the remainder were slaughtered. Mr. Lloyd again emphasises the value of the direct microscopical test. Thus during 1925 37 country cows and 10 city cows were found to be suffering from tuberculosis of the udder by the microscopical examination alone. These 47 cows were removed from the milch herds and slaughtered without having to wait for the biological test. The mixed milk of the herds was, therefore, freed from infection about a month earlier than in those cases where resort had to be made to the biological test.

Hull.

Dr. W. Allen Daley reports a big spurt in the work of getting rid of the privies and pail closets in the city. It was begun in 1921 with the conversion of 183. In the four subsequent years the numbers converted have been 594, 1598, 5163, and 8555. Over 16,000 of the 41,000 to be dealt with had been converted up to the end of 1925. The Health Committee employ a whole-time salesman, whose duty it is to find customers for the night soil, which is sold for manure to farmers, market gardeners, and allotment-holders. Over half of this material is carried into agricultural areas outside the city in the carts in which it is collected.

Hull Fair is an annual institution that owes its inception to powers contained in the first charter granted to the town by Edward I. in 1299. It lasts for six days in October, on a site covering 13½ acres, and is visited by tens of thousands of people. In 1925 there were 245 vans and four tents on the fair ground, occupied by 566 adults and 204 children. The sanitary inspectors make daily visits, and temporary sanitary conveniences are provided. No overcrowding was discovered, and the only known cases of sickness were a case of pneumonia and a case of pleurisy. Hull had the first municipal crematorium, opened in 1901. During the last five years cremations have averaged about 44.

In 1920 it was estimated that 5000 houses were needed to meet the arrears of the war years and the years before the war. Since that date 2157 houses have been erected, of which 1475 provide for the increase of the population since 1920. As, however, many houses have been demolished in these years, arrears have only been reduced by 282. The corporation have three housing estates on the outskirts of the city, comprising 328 acres, of which over 20 are outside the boundaries. At the end of 1925 on these estates 1032 houses had been completed, 510 were in course of erection, and contracts for 498 had been let. Two steel (Braithwaite) houses have been put up on the West estate, and contracts have been let for 442 houses of special concrete or concrete and steel frame construction. If the present acceleration in the rate of building is maintained the shortage should be eased in a few years, but it may prove necessary, says Dr. Daley, to build houses of a less costly type. Over 80 per cent. of the houses in the city are of the working-class type, which Dr. Daley divides into the artisan type (43 per cent.), the inferior terrace type (33 per cent.), and the slum houses (4 per cent.). The privy conversions have greatly improved the second class . . . "as under the old system the contents of the privy had to be carried through the kitchen, often during the breakfast hour." The slum houses include about 500 of the back-to-back type, and are old and poor in structure. Demolition is the only remedy. Owing to the shortage of houses no further action has been taken with regard to the seven unhealthy areas covering about 28 acres and comprising 1784 houses, which were reported in 1919. One area has been

proceeded with, and will displace the 721 occupants of 182 houses, for whom the provision is being made of 145 "parlour" houses on the East Hull estate, two miles away from the area. Owing to the unlikelihood of the dispossessed tenants taking up houses so far from their work, a scheme is now under consideration for the erection of three blocks of four-storey flats on a portion of the original area.

There is one retailer of Grade A milk and one licensed dealer in pasteurised milk. In September it was decided to get Grade A milk for the two city hospitals from a producer in the East Riding. Twenty-seven samples of milk were examined for tubercle, and two gave a positive result. During 1925 there were 22 notifications of encephalitis lethargica and 20 deaths. An outbreak of small-pox occurred in the latter part of the year and continued until March, 1926. There were 59 cases in 1925 and 35 in 1926. The disease was of a mild type, and caused no deaths. The source ofthe original infection was never discovered. The tuberculosis training colony, from its inception in 1919 to the end of 1925, trained 108 Hull residents (105 men and 3 women). Of the 108, 76 were at work at the end of the year, and 40 of these at the vocations for which they had been trained. On the other hand, of the 12 Hull men sent to other colonies to be trained under the Government scheme, only one is working at the occupation for which he was trained. The scheme for the prevention of crippling has received much consideration, and as a result six beds will be taken at the Yorkshire Orthopædic Hospital at Kirkby Moorside for a trial period of six months; the residential beds at the school for cripples will be increased from 18 to 24, and non-tuberculous cripples will be admitted at any age from 2 to 16; and a clinic under the direction of an orthopædic surgeon will be established as a clearing-house. The figures for venereal disease indicate that much gonorrhœa in women is untreated. Thus during the last two years there have been about two cases of syphilis to three of gonorrhœa among males, whereas among females there are two cases of syphilis to one of gonorrhœa. When the new clinic has been completed there will be a separate session conducted by a woman doctor for women and children innocently infected. Midwives attended about 64 per cent. of the births, and sent for medical aid in 22·7 of their cases. Preventive midwifery is making progress. Thus at the clinic conducted by Dr. Ethel Townend there were 602 new patients. Forty-six malpresentations were corrected by external version, 12 cases of disproportion were sent in to the maternity home for induction of labour, and two cases of severe pelvic contraction were sent to the Hull Royal Infirmary for Cæsarean section. On the other hand, the unsatisfactory results of emergency Cæsarean sections was demonstrated by five such cases admitted to the maternity home. Two of the mothers died and four of the children were stillborn. In an appendix Dr. Katherine Gamgee submits a report on two years' working of the artificial light clinic. Over 300 cases were treated, and Dr. Gamgee's conclusion is that in a large industrial area such a clinic should prove of very great value in the treatment of rickets, malnutrition, and anæmia of children of all ages, for the prevention of early disease in young children, and for dealing with children who are not making progress at the ordinary centres.

Cardiff.

Dr. Ralph M. F. Picken thinks that the relatively high standard of health maintained during this period of trade depression is due to the efforts of the guardians and to the unemployment insurance funds. Referring to the steadily increasing mortality from cancer he thinks that the increase is a real one in Cardiff. The local investigation as to the end-results of operations for cancer of the breast confirms the general conclusion that results are excellent, given early diagnosis and early operation. Cardiff holds a bad position for tuberculosis, and had the highest rate from pulmonary tuberculosis among the 17 large provincial towns during 1925. Dr. Picken emphasises the fact that the number of beds for advanced cases is inadequate. He also points out how much more satisfactory it is to prevent tuberculosis than to attempt to cure it when it has become manifest. Thus while 63·6 per cent. of the cases of pulmonary tuberculosis notified in 1925 were alive at the end of that year, only 7·4 per cent. of those notified in 1915 and still known to the department have survived. Open-air schools, open-air teaching, more attention to physical culture and the teaching of hygiene in the schools, more seaside homes for debilitated children, and the use of artifical sunlight during the winter are some of the preventive measures which he advocates. At the centres for venereal disease 34 per cent. of the patients ceased to attend before the final tests for cure. As might be expected, the default was highest among the seamen—namely, 43 per cent. A statement shows where 494 seamen contracted their infection. Of the 80 cases recorded against Wales 73 were infected in Cardiff, 49 were recorded against England, 25 against the Argentine, 73 against France, 15 against India, 21 against Italy, 29 against Spain, and sc forth; but the record is rather a measure of the amount of trade than of the prevalence of venereal disease in those countries. The new clinic for women and children was opened in the last week of 1925, and the attendances up to date showed that it is serving a section of the public not provided for hitherto. The antenatal clinic, under the joint management of the health department and the infirmary, became firmly established in December, 1924, and the other antenatal clinic has been transferred to more satisfactory premises. The new cases attending increased from 325 in 1924 to 815 in 1925, and the quality of the antenatal service has improved in proportion to the improvement in premises and equipment. The corporation now pays £1200 per annum to the maternity branch of the Royal Infirmary instead of paying for individual patients. During 1925 the cases admitted to maternity beds numbered 461; 349 were sent through the antenatal clinics, 48 complicated cases were sent by general practitioners, and there were 64 other Cardiff cases. On Nov. 3rd the new orthopædic clinic was opened. The 130 crippled children under 5 years of age known to the department comprise 54 crippled by poliomyelitis, 25 by congenital malformations, and 32 by rickets.

The proportion of houses in Cardiff occupied by members of more than one family is about 28 per cent. A sample of 3112 of such houses showed that in 402, or 13 per cent., there was mixing of the sexes over 13 years of age—a rather high age—in sleeping-rooms (exclusive of married couples). If the same proportion holds for all the 11,000 multiple tenant houses, the number sex-overcrowded amounts to 1420. Sex-overcrowding is, however, not confined to multiple tenanted houses, and it is estimated that in the city at present there are about 2000 sex-overcrowded houses.

There were 55 samples of milk examined for tubercle bacilli, and two gave a positive result.

Dr. Picken shows that the hospital accommodation of the city is inadequate. The voluntary hospital accommodation amounts to 483 beds, with prospect of immediate extension to 515, and ultimately to 615. This, however, includes 74 beds at the Seaman's Hospital and 34 at the Prince of Wales's Hospital, to a diminishing extent available for Cardiff cases. The guardians propose to erect a new hospital at Llandough with 408 beds, capable of extension to 952. Dr. Picken points out that the new hospital will, sooner or later, become a municipal hospital, that provision should be made for paying patients, that it should ultimately form an integral part of the medical school, and that a very large proportion of the patients will be of special types and cannot satisfactorily be treated in large blocks of wards of uniform pattern. He urges that the new hospital should be thoroughly up to date in every respect, and that a well-equipped laboratory should be provided at the outset.

REPORTS OF SCHOOL MEDICAL OFFICERS.

Name of town.	No. on roll.	Av. elem. school attendance.	No. of routine children examined.	No. of special examinations and re-inspections.	Percentage of children found on routine examination requiring treatment.†
Shrewsbury ..	—*	—*	1,267	7,543	8·0
Eastbourne ..	4,906	4,435	1,920	6,211	11·4
Stockport ..	15,757	13,465	4,888	11,236	23·24
Eccles	—*	—*	2,255	4,859	21·1

* Not given. † Excluding dental defects and uncleanliness.

Shrewsbury.

Dr. A. D. Symons, who took up his duties in September, 1925, reports that, so far as he has been able to judge, the health of the Shrewsbury children is satisfactory, as is certainly suggested by the small percentage of defects found during routine examination; but he has lost no time in pointing out the need for further effort. The inadequacy of the present nursing staff and of the present dental arrangements is clearly shown, as is the necessity for a definite scheme for treating tonsils and adenoids and for a class of mental defectives. He supplements oral advice given at medical inspections by the issue of leaflets written in clear and simple language, on the eradication of nits, the necessity for early treatment of squint, the prevention of dental caries, hygiene of the air passages, and food for growing children. Copies of these pamphlets are given in the report. The school clinic, which is open every morning except Saturday, has been reorganised, and has become a real centre for help, advice, and treatment. Many sound and practical suggestions contained in the report will soon be carried into execution—e.g., the provision of slippers in schools to prevent children getting chilled by wet and sodden boots.

Eastbourne.

Dr. W. E. Willoughby includes in his report a summary of the work done by the organiser of physical training; this shows a marked improvement in the condition of many malformations. There has been a big fall in the school population since 1912, owing to the low birth-rate in 1918–19—the largest decrease being in the infants departments. This decrease may make it possible to close certain schools where hygiene is defective. The facilities for treatment and for the care of abnormal children are good. There are clinics for ophthalmic, and throat, nose, and ear examinations, for dental treatment, and for inspection and treatment of malnutrition and tuberculosis. There is an open-air school and a special school for mental defectives, and although there is not yet an orthopædic centre, much good work is done at voluntary clinics for massage and electrotherapeutics. The secondary school-children showed a higher percentage of defects than the elementary school-children, while in the voluntary—e.g., continuation—schools the coöperation of the parents was much poorer. Dr. E. H. B. Coghill gives a short account of his treatment in a few bad stammerers.

Stockport.

The assistant school medical officer, Dr. W. H. Rowell, presents this report in place of the late Dr. A. G. Jenner. Reinspection in nearly half of the elementary schools was not carried out owing to illness among the staff. Many improvements have been made in the sanitary conditions. In some schools trough and privy closets have been replaced by separate flushing conveniences; in others lighting and ventilation have been improved, while playgrounds have been formed and tar-paved in four schools. Dual desks and tables are replacing antiquated furniture. The authority's schemes provide for treatment of minor ailments and dental defects; for refraction work with provision of spectacles; for the ascertainment of blind, deaf, defective, or epileptic children at the school clinic; for the operative treatment of tonsils and adenoids and aural conditions by arrangement with the Stockport Hospital; and for the care of orthopædic cases, through the special department of this hospital. X ray treatment for ringworm is given at the Skin Hospital, Manchester. Dr. Rowell states that 16 routine examinations are made hourly, but perhaps this rate is only temporary and necessary because of reduction in the staff. It is scarcely possible to examine children so fast and yet do justice to the doctor and the child, whilst such speed certainly does not impress parents.

Eccles.

Doubtless the increasing work of the school medical service will demand further medical assistance for Dr. J. E. Spence, who, with the part-time services of one dentist and an ophthalmologist, carries out the duties of medical officer of health and school medical officer at Eccles. There have been few changes during the past year apart from some improvement in the hygienic conditions of a few schools. The coördination of the school and public health services is emphasised; delicate children under school age are kept under supervision at the infant welfare centre, and are frequently visited in their homes by the nurses, careful records being kept in every case so that in time a full history of each child from birth onwards will be available; infants suffering from dental and visual defects can be treated at the school clinic. The number of dirty and verminous children shows a considerable increase over last year, partly because the standard of cleanliness has been raised, but also because of the lowered health and livelihood of parents. The recent provision of an ophthalmic clinic led to an increase in the number of visual defects receiving treatment, from 80 in 1923 to 304 in 1925—a striking proof of the need for such provision for the school population. No special schools exist apart from an excellent open-air school, which has benefited many children whose records are given in the report.

INFECTIOUS DISEASE IN ENGLAND AND WALES DURING THE WEEK ENDED DEC. 4TH, 1926.

Notifications.—The following cases of infectious disease were notified during the week: small-pox 316 (last week 313), scarlet fever 1786, diphtheria 1251, enteric fever 44, pneumonia 1021, puerperal fever 49, puerperal pyrexia 136, cerebro-spinal fever 7, acute poliomyelitis 41, acute polio-encephalitis 4, encephalitis lethargica 38, dysentery 4, ophthalmia neonatorum 99. There was no case of cholera, plague, or typhus fever notified during the week. The number of notifications of small-pox remains practically stationary, and the county incidence the same. The total of acute poliomyelitis and polio-encephalitis, taken together, namely, 45, shows a gratifying decrease. There is one notification only from Kent (Tonbridge). The three notifications from Surrey are attributed to Frimley, Wimbledon, and Woking. Rutland has again failed to report at all.

Deaths.—In the aggregate of great towns including London there was no death from small-pox, 3 (1) from enteric fever, 18 (6) from measles, 7 (2) from scarlet fever, 18 (4) from whooping-cough, 39 (16) from diphtheria, 58 (19) from diarrhœa and enteritis under two years, and 68 (14) from influenza. The figures in parentheses are those for London itself. It is noteworthy that London, which provides for hospital isolation of measles, has no death from that disease; during the previous eight weeks there were only three deaths from measles in London as compared with 70 in the 105 great towns excluding London. The M.A.B. hospitals at present contain on the average 25 cases of measles.

DONATIONS AND BEQUESTS.—Mr. Oscar Wilkinson, of Sunnyside, Scarborough, bequeathed £1000 each to the Scarborough Hospital and Dispensary, the Scarborough Cottage Hospital, the Scarborough Charity Organisation Society, the Scarborough Convalescent Home for Children, the Hull Royal Infirmary, the Sheffield Royal Infirmary, the National Lifeboat Institution, the Cancer Hospital, Brompton, St. John's Hospital for Diseases of the Skin, Leicester-square, London, and St. Dunstan's Hostel for the Blind.

Correspondence.

"Audi alteram partem."

SOCIAL CAPACITY IN DELINQUENCY.

To the Editor of THE LANCET.

SIR,—I have read with great interest the article by Dr. R. F. Jarrett in THE LANCET of Nov. 20th, but there are one or two points in the paper which seem to call for discussion. In the first place, the Porteus "maze" tests would hardly seem the best choice for determining the individual's apperceptive abilities. Their value lies in estimating powers of mental representation and planfulness in dealing with geometrical figures rather than with a concrete situation such as the individual is likely to meet with in ordinary daily life. To be sure, Porteus [1] himself claims considerably more than this for the test, but his statements have not been verified by other investigators. In my opinion, by far the most valuable test of this nature, and one which has a fairly high correlation with social apperceptions, is Healy's "Pictorial Completion II." [2] In this test, which is, I believe, too little known in England, the examinee is faced in pictorial form with ten concrete situations such as he is likely to meet with in everyday life, these situations varying from picture to picture instead of being, as in the Porteus "maze" tests, all the same type.

Even in this test (P.C. II.), though considerable work has been done in correlating the test results with the social efficiency of the individual, the best authorities make decidedly guarded statements. Bronner,[3] in a very thorough investigation of 1043 mentally normal individuals, of whom 729 were repeated offenders, states that "case studies show that in some instances defective apperceptions are directly related to delinquency, indeed, are, perhaps, the main cause," and that "it is worth while to study the apperceptive abilities of individuals because they represent a particularised ability that has prognostic value and important social implications." She adds, however, that "delinquents as a group, even repeated offenders, have apperceptive ability not differing from non-delinquents sufficiently to be significant." Perry,[4] in the study of 340 feebleminded individuals, concludes that "analysis of test results and social behavior in some of the irregular cases suggests that in the Healy 'pictorial completion II.' we may have a valuable tool for aid in discovering those of the feebleminded who have the mental traits most necessary for social adjustment." In view of these distinctly moderate statements, it seems that one should be very wary of accepting any test, or even a group of tests, as indicating the possible social reactions of the individual. It would be interesting to check Dr. Jarrett's results by an investigation of the after-career of the tested individuals and also to compare his findings with the results obtained from testing a group of non-delinquent individuals of similar age, educational opportunity, and social status. So far as I understand from the paper, neither of these investigations has been carried out.

Again, Dr. Jarrett quotes Burt as stating that "conduct and misconduct are always, in the last analysis, the outcome of mental life," and deduces from this that Burt considers the delinquent to be a person of peculiar "innate mental constitution." Surely no one who has read Burt's[5] careful and thorough work can fail to appreciate the very great stress which he lays on environmental conditions of every type. Were delinquency due to innate, and, therefore, irremediable causes, no treatment, whether in the form of punishment, detention, foster-home placing, or other mode of attack would be of any avail. In this connexion I should like to mention the recent and remarkable work of Healy and Bronner,[6] in which, in a thorough investigation and follow-up of the careers of 4000 delinquents, extending over a period of 14 years, the causes of delinquency and results of various methods of prevention and treatment have been assessed in an unusually scientific manner. On the basis of these investigations, they conclude that hereditary factors and so-called innate mental characteristics are of little value in prognosis and show but a very low correlation with the ultimate success or failure of their cases.

I agree with Dr. Jarrett that there is at present much loose and unscientific talk concerning the causation of delinquency, but is this an adequate reason for falling back upon the gloomy and fatalistic conception of innate and incurable defect? Recent researches have done much to disprove this doctrine and to show the very great value of constructive treatment suited to the requirements of the individual offender. What is urgently needed to-day is a scientific evaluation of *all* the factors concerned in making the delinquent what he is. This must be the first step in the development of a rational therapy which is already long overdue.—I am, Sir, yours faithfully,

R. EVELYN LUCAS,
Rockefeller Medical Fellow.

Boston, U.S.A., Dec. 1st, 1926.

[1] S. D. Porteus: Guide to Porteus Maze Test, 1924.
[2] W. Healy: Pictorial Completion Test II., Journal of Applied Psychology, September, 1921.
[3] A. F. Bronner: Apperceptive Abilities of Delinquents, Journal of Delinquency, vol. vii., No. 1, January, 1922.
[4] D. E. Perry: Interpretation of the Reactions of the Feebleminded on the Healy Pictorial Completion Test II.—Social Implications, Journal of Delinquency, vol. vii., No. 2, March, 1922.
[5] C. Burt: The Young Delinquent, 1925.
[6] Healy and Bronner: Delinquents and Criminals, their Making and Unmaking, The Macmillan Company, N.Y., 1926.

CYCLIC VOMITING.

To the Editor of THE LANCET.

SIR,—My experience of cyclic vomiting in childhood corresponds essentially with that of Dr. Cameron, but I would also direct attention again to the remarkable cases I published in THE LANCET (1924, i., 1045) of volvulus of the small intestine in which the diagnosis of cyclic vomiting had been made. I am inclined to think that there is something more to be learnt about the influence of abnormal mobility of the intestines as a factor in some of these cases of cyclic vomiting than is commonly supposed. Although the bearing of such curious and exceptional cases on the subject is obscure, the American observations commented upon in your annotation interested me as an independent contribution to the problem. One other point of interest is that I have had under my care several cases of cyclic vomiting who in earlier life had suffered from cœliac disease.

I am, Sir, yours faithfully,

F. JOHN POYNTON.

Devonshire-place, W., Dec. 11th, 1926.

THE DISSOLUTION OF INSULIN.

To the Editor of THE LANCET.

SIR,—Dr. Funk's reputation as a biochemist renders a careful consideration of any statements he may make necessary, but I agree with Dr. Lawrence that the letter published in your issue of Nov. 27th is not as clear as could be wished. Dr. Funk's second letter states his position more definitely, but does not furnish sufficient detail for a critical examination of his claims, and until this is available useful criticism is not possible.

The hyperglycæmic effect of ordinary insulin in rabbits, referred to by Dr. Lawrence, appears to have been first described by Zondek and Ucko in 1925.[1] Early this year a similar effect in several cases of diabetes was reported by H. J. John.[2] I have met with a few diabetics in whom the first effect of injected insulin has been to cause a rise in the blood-sugar, and experiments Mr. Howard and I have carried out with rabbits and guinea-pigs have shown that in certain animals an initial hyperglycæmia can be regularly induced under suitable conditions. The

[1] Klin. Wchschr., 1925, iv., 6.
[2] Jour. Lab. and Clin. Med., 1926, xi., 6.

most important factors appear to be the level of the fasting blood-sugar and the dose of insulin employed, a small dose of insulin giving rise to a more pronounced initial hyperglycæmia in healthy animals with a high fasting blood-sugar, of 120 mg. or more, than in those with a low fasting value, of 80 mg. or less; when the dose of insulin is increased the hyperglycæmia becomes less pronounced and more evanescent, so that eventually it either fails to develop, or is too quickly obliterated to be detected, this effect being more readily induced in low than in high blood-sugar animals, as we showed in a paper read before the Royal Society of Medicine this summer.[3]

As long as the exact nature of the causes determining the normal level of the blood-sugar are not decided, the interpretation of such results, and findings like those described by Drs. Funk and Lawrence, must remain largely a matter for conjecture. In the paper referred to we suggested that the occurrence of unusual fasting blood-sugar levels in apparently healthy animals and the paradoxical influence of insulin on the blood-sugar of some, might be dependent upon differences in the balance between the activities of the ductless glands regulating carbohydrate metabolism, the delayed fall and occasional initial rise following an injection being partly due to the neutralising effect known to be exerted by pituitrin upon the hypoglycæmic action of insulin.

I am, Sir, yours faithfully,

P. J. CAMMIDGE.

Nottingham-place, Marylebone, W., Dec. 4th, 1926.

AFTER-EFFECTS OF POISON GAS.

To the Editor of THE LANCET.

SIR,—The contribution to this subject made by Dr. Nelson in your issue of Dec. 11th is of interest and value to others than those who are chiefly concerned with conditions that are the aftermath of the Great War, since the after-effects of poison gas in war have some counterpart in conditions arising in industrial life. For those who are constantly seeing men who were gassed during the war Dr. Nelson's paper is particularly interesting, since the pathological findings in his case fit in so well with the clinical picture these men so often present. Anyone particularly interested in this subject will find an excellent *exposé* of it in an address by Dr. Émile Sergent delivered at Val-de-Grâce in January, 1925, which is included in his "Études Cliniques sur la Tuberculose et les Maladies de l'Appareil Respiratoire," second edition, published by Maloine, Paris, 1926. It is interesting to find that the views of Dr. Nelson and of Profs. Sergent and Achard as to the effects of *les gaz chlorés* are practically identical.

I am, Sir, yours faithfully,

Manchester, Dec. 11th, 1926. JOHN H. P. GRAHAM.

Obituary.

HENRY STOKER, F.R.C.S.I., D.P.H.

NEWS has reached this country of the death of Colonel Henry Stoker, at the Royal Military College, Duntroon, Australia. He came of an old professional family and both his father and grandfather (1773–1845) were prominent in medical practice, his father being Dr. E. A. Stoker, of Dublin. The fourth of seven brothers, all but one of whom took up medicine, Henry Stoker was educated at Bective College and Trinity College, Dublin, and qualified in 1884. Like his father and three of his brothers, he became a Fellow of the Royal College of Surgeons in Ireland. Interested in all forms of outdoor sport he will be remembered by contemporaries as a prominent member of the Wanderers Rugby Football Club, playing with his brothers, two of whom reached international standing; he himself just missed this distinction, being selected for the reserves. Dr. Stoker early decided to make his home in Australia and after taking special courses of study at continental centres was appointed sanitary officer to the port of Melbourne. During his time of office he did good pioneer work in connexion with fly-borne diseases, but his interest in surgery soon led him to give up his official appointment. Moving to Wagga Wagga he developed a large practice, and became recognised as one of the leading surgeons in New South Wales. On the outbreak of the late war he joined the Australian Army Medical Corps, and when the war was over the Federal Government marked its appreciation of his services by appointing him to the Royal Military College, Duntroon, where he remained until his death.

Colonel Stoker's wife, a daughter of the late Mr. James Poe, of Kilkenny, was killed in a carriage accident a year ago. He leaves two sons.

EDMUND JOHN ERSKINE RISK, M.R.C.S. ENG.

Colonel E. J. Risk, who died in London on Dec. 7th at the age of 68, was a son of the late Rev. John Erskine Risk. As a student at St. Bartholomew's Hospital he distinguished himself both in scholarship and athletics. He qualified M.R.C.S. Eng., L.R.C.P. & L.M. Edin. in 1880, and in the following year entered the Army Medical Service, proceeding to Malta. He served in the Egyptian campaign and was present at the battle of Tel-el-Kebir. After living for some time in India he was, in 1891, invalided home suffering from dysentery and malaria. After 12 months' sick leave he was posted to the Aldershot Command, and three years later went to the West Indies, where he served nearly six years at Barbados and St. Lucia. In 1901 he was on the embarkation staff at Southampton, and in December of that year sailed for South Africa on the hospital ship *Simla*, of which he took medical charge at Lorenzo Marques for three months. Next he proceeded to Elandsfontein, where he had charge of the surgical division, and after a further period of service at home and in Ireland he returned to South Africa, and was appointed senior medical officer at Bultfontein, Orange River Colony, a post which he held until 1910. Appointment to the Irish Northern Command followed, and in 1911 he became Commandant and Director of Studies at the Royal Army Medical College, Milbank. Unfortunately his health failed, and he had to retire in 1913.

Colonel Risk leaves a widow and one daughter.

LONDON STREET ACCIDENTS.—The London County Council has decided to ask the Ministry of Transport to call a conference to consider street accidents in London. In the three months, July–September, there were 269 fatal accidents, a large increase over former figures. In the same period 26,727 persons were injured in the streets, an average of 293 per day.

JAMES MACKENZIE INSTITUTE FOR CLINICAL RESEARCH.—On Nov. 23rd Prof. Adam Patrick read a paper on Diabetic Coma. After referring to the facts known about the chemistry of ketosis, he showed how imperfect carbohydrate utilisation may be the result either of deprivation of sugar or inability to assimilate it. He emphasised the importance of aceto-acetic acid in the body and pointed out that there was no object in elaborating tests to distinguish this substance from acetone in the urine. Dealing with the symptomatology of coma, Prof. Patrick laid stress on the early signs, especially abdominal pain. He advised treating every symptom which appeared out of the ordinary as the possible commencement of coma. Contrasting the symptoms of coma with those of hypoglycæmia, he showed how in the latter the prominent symptoms are nervousness, mental excitement, tachycardia, and perhaps diplopia. Dealing next with treatment, he referred to the importance of making every effort to prevent the occurrence of coma by attention to the diet laid down, and especially by avoidance of any change which will cause difficulty in accurately adhering to the ordered regimen. In conclusion, he gave a detailed account of methods of treatment of coma once established, up to 200 units of insulin being given in the 24 hours with control by two-hourly examination of specimens of urine. He mentioned the utility of the duodenal tube in facilitating the introduction of large quantities of fluid, as recommended by Poulton.

[3] Proc. Roy. Soc. Med., Sect. of Med., 1926, xix., 37.

THE SOCIETY OF APOTHECARIES.

PRESENTATION TO PROF. W. E. DIXON.

THE Master and Wardens of the Society of Apothecaries of London gave a dinner on Tuesday last, Dec. 14th, at their Hall, the occasion being the presentation to Prof. W. E. Dixon of the Society's Gold Medal for Therapeutics. The presentation was made by the Master, Dr. Alfred Hepburn, who outlined the development of the medical profession since the times when it was divided into the physicians who possessed university degrees and very generally extended their knowledge by continental travel; the apothecaries who possessed a definite status in therapeutics; and the surgeons, whose Company was allied to the Company of Barbers, and who were mainly engaged in blood-letting. He sketched the rise of the Royal College of Physicians of London from the days when election to that body was in the hands of the Bishop of London, the Dean of St. Paul's, and four medical Censors; and, admitting that there had been times when the College and the Society of Apothecaries were at variance, pointed out that harmony now prevailed in the common desire to promote therapeutics. In this connexion he gave reasons for finding Prof. Dixon a highly fitting recipient of the Society's Gold Medal.

Prof. Dixon, in acknowledging a deep sense of the compliment, pointed out that the trend of modern thought was showing the human body itself to be an apothecary's shop, doling out remedies as required from its own physiological resources, which were thus shown to be distinctly therapeutic. In the matter of surgery, he alluded to the vast opportunities for surgical progress that were opened up by the chemical and pharmacological work which resulted in the discovery of anæsthetics.

Dr. R. W. Statham, the Senior Warden, proposed the toasts of the Royal Colleges which he coupled with the names of Sir John Rose Bradford and Sir D'Arcy Power. Sir John Rose Bradford, while agreeing with the emphasis that had been laid by previous speakers on the essential value of treatment, pleaded that there was still room for the physician, inasmuch as it was generally admitted that diagnosis should come first, while diagnosis was largely dependent upon a knowledge of pathology. Sir D'Arcy Power, in a learned excursion into the history of medicine, pointed out that the apothecaries had developed from a Guild of Pepperers, and had early secured freedom, while the independent Company of Surgeons fell into bondage to the Barbers, emergence from which meant bankruptcy at the time the separation was made.

The toast of The Guests was proposed by the Junior Warden, Lieut.-Colonel C. T. Samman, and was replied to by Mr. Arthur Denman, who interested the company with a narration of his medical ancestry. His great-grandfather, he said, was Thomas Denman, the famous accoucheur at the close of the eighteenth century, whose three children were—one son, who became Lord Chief Justice of England, and two daughters, of whom one married Dr. Matthew Baillie, the pioneer in clinical pathology, who presented "the gold-headed cane" to the College of Physicians, and the other married Sir Richard Croft, the well-known obstetrician, who had the misfortune to attend the Princess Charlotte, the only daughter of George IV., in her fatal confinement. Through his great-grandmother, he said, Sir Benjamin Brodie and Prof. Brodie also came into the pedigree.

The speeches were interspersed with a programme of music provided by Miss Olive Kavann and Mr. Percy Kahn.

GUY'S HOSPITAL.—The Matron, Miss Margaret Hogg, C.B.E., is to retire from the service of the hospital on March 27th, and Miss Emily MacManus, Matron of the Bristol Royal Infirmary, has been appointed to take her place.

The Services.

ROYAL NAVAL VOLUNTEER RESERVE.

Prob. Surg. Sub-Lt. T. A. Brand is confirmed in his rank.

ROYAL ARMY MEDICAL CORPS.

Capts. to be Majs.: E. L. F. Nash, M. Morris, W. E. Adam, R. H. Lucas, M. P. Power, G. B. Hadden (Prov.), and F. J. Hallinan.

Temp. Capts. to be Temp. Majs.: W. Duguid, H. L. Mann, J. Boyd, J. L. Dimond, H. Davies-Colley, St. G. E. Harris, E. K. Campbell, F. C. Doble, and W. B. Swete-Evans.

ARMY RESERVE OF OFFICERS.

Lt.-Col. H. G. P. Stallard having attained the age limit of liability to recall, ceases to belong to the Res. of Off.

ARMY DENTAL CORPS.

Capt. S. J. F. Webb, late Dental Surg., Gen. List, to be Capt.

TERRITORIAL ARMY.

Lt.-Col. L. D. Bailey to be Bt. Col.

Capt. G. P. Crowden (late K.O.Y.L.I.) to be Lt. super. for service with the Medical Unit of the London University O.T.C., and relinquishes the rank of Capt.

Capt. R. I. Dacre to be Maj.

Lt. W. B. McCall to be Capt.

ROYAL AIR FORCE.

R. A. W. Kerr and E. Thompson are granted short service commissions as Flying Officers for three years on the active list.

G. E. Church is granted a short service commission as a Flying Officer for three years on the active list, and is seconded for duty with the Royal Albert Edward Infirmary and Dispensary, Wigan.

Flying Officer B. W. Cross is promoted to the rank of Flight Lt.

INDIAN MEDICAL SERVICE.

The King has approved the retirement of Lt.-Col. E. F. G. Tucker.

Capts. R. Hay, M. Murphy, Jehangir Hormusji Oonvala, H. E. Murray, and W. H. Will to be Majs.

The King has approved the grant of a temporary commission to Tharuvi-parambil Reghunatha Pai Rama Pai.

The King has approved the relinquishment of their temporary commissions by Capts. Shivax Ardeshir Paymaster (permitted to retain the rank of Capt.), Showkiram Sahijram Malkani (permitted to retain the rank of Capt.), and Jehangir Cursetji Bharucha.

Dr. Ganga Charan Garg, Provincial Medical Service, medical officer, District Jail, Lucknow, to be Medical Officer in immediate charge of the Sadr Dispensary, Rai Bareilly. Dr. Bhagwati Prasad Mital, medical officer of health on special duty plague research work, to revert as Medical Officer of Health, II. Class. Lt.-Col. C. C. Cumming to be officiating A.D.M.S. Allahabad Independent Brigade Area. Capt. H. R. Cursetji to be Specialist in Ophthalmology, Rawalpindi District. Capt. R. McRobert to be Officiating Specialist in Surgery, Burma District. Capt. P. M. Antia to be Deputy Assistant Director of Pathology, Bombay District, and Capt. A. Y. Dabholkar to be Officer-in-Charge, Brigade Laboratory, Bareilly. Lt.-Col. W. L. Harnett, superintendent, Campbell Medical School and Hospital, is nominated to be a member of the Bengal Council of Medical Registration, vice Lt.-Col. M. Mackelvie. Dr. E. Muir, pathologist and research worker in the School of Tropical Medicine, Calcutta, to be a Member of the Governing Body of the State Medical Faculty for a period of two years, vice Maj. Hasan Suhradardy. Dr. Kedarnath Das to the Bengal Council of Medical Registration, in place of Dr. Pramatha Nath Nandi.

HEALTH CENTRE IN NEW YORK.—On Nov. 28th a health demonstration centre was opened in East 38th Street. The building in which it is housed has been altered and equipped by the Milbank Memorial Fund, and contains model clinic and consultation rooms, a rest room, a large roof for patients, and a lobby where information about health is freely given. The centre is in one of the most congested parts of New York. An account of the work of the Milbank Trust appeared in THE LANCET of Nov. 13th (p. 1023).

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

THE CORONERS (AMENDMENT) BILL.

THE Coroners (Amendment) Bill was considered by Standing Committee D of the House of Commons on Tuesday, Dec. 7th. Mr. MORGAN JONES was in the chair.

On Clause 1 (which deals with the qualifications and disqualifications of persons for appointment to the office of coroner),

Mr. RHYS DAVIES moved an amendment to provide that a dual qualification, legal and medical, should be required for appointment as coroner. He said that he understood that the dual qualification had appertained in London for some years, and he did not believe that there had been any difficulty in filling the posts in consequence. He thought that what was good enough for London ought to be good enough for large centres like Manchester, Leeds, Glasgow, and Liverpool.

Captain HACKING (Under Secretary for the Home Department) said that the number of coroners in London was small compared with the number of coroners throughout the country. There were about 300 coroners throughout the country, and it would restrict the choice very much if they insisted upon a dual qualification.

The amendment was negatived.

On Clause 5 (salaries of county and borough coroners),

Captain HACKING moved a new subsection (4) as follows: "The salary payable under this section of a borough coroner shall be instead of the fees and allowances specified in the Fourth Schedule to the Municipal Corporations Act, 1882, and the additional payment mentioned in Subsection (2) of Section 27 of the Coroners Act, 1887, or the remuneration payable under any Act, or Provisional Order confirmed by an Act, as the case may be, and no such fees, allowances, additional payment, or remuneration as aforesaid shall be payable to a borough coroner after the commencement of this Act."

The amendment was agreed to.

Captain HACKING moved to insert at the end of Subsection 5 the words: "The salary of a borough coroner shall in default of agreement between him and the council by whom his salary is payable be at a rate fixed by the Secretary of State."

The amendment was agreed to.

On Clause 11 (appointment of assistant deputy coroner),

Mr. GATES moved an amendment to include franchise coroners.

Captain HACKING, in resisting the amendment, said that under the Bill franchise coroners would cease to exist. The existing power of a county or borough coroner to appoint a deputy rested upon Statute, but it was not so with franchise coroners. Any power that they had to appoint a deputy rested upon prescription and custom. There was no object in bringing franchise coroners within the provisions of the Bill.

Mr. GATES said it was true that franchise coroners were destined to perish ultimately, but as long as they existed they should have the power to carry on their courts. If the coroner was ill and his deputy was ill, there was nobody to carry on the work, and inquests might be delayed.

Captain HACKING said that there had never been any difficulty to his knowledge, and no fear need be entertained that inquests would be delayed.

The amendment was negatived.

On Clause 14 (view of the body and burial order),

Captain HACKING moved to leave out Subsection (2) and to insert a new subsection as follows:—

"Subject to the provision of any rules made under this Act an order of a coroner authorising the burial of a body upon which he has decided to hold an inquest may be issued at any time after he has viewed the body."

He explained that the subsection in the Bill was a re-enactment of a provision in the Coroners Act, 1887, with certain modifications. The Births and Deaths Registration Bill, which was at present going through Parliament, affected this matter, and until that Bill was placed on the Statute Book it was impossible to know exactly what it would contain. This clause, however, must work in connexion with that Bill, and it was thought more desirable that the Lord Chancellor should have the opportunity of issuing Regulations and Rules rather than lay down something in the Bill which might prove unworkable.

The amendment was agreed to.

On Clause 17 (inquests where several deaths arise from one accident),

Mr. LEE moved an amendment to provide that the coroner in the district in which the accident occurred should conduct the inquiry.

Captain HACKING said there were many cases where it was advantageous that the inquest should not necessarily be held at the place where the accident happened. Several people might be badly injured in a colliery accident, and might be taken to the nearest town where there was a hospital, and if they died there it would not be advisable to remove the bodies to another district in order to hold the inquest. It might be for the convenience of everyone that the inquest should be held at the place where the bodies were.

The amendment was negatived.

On Clause 21 (post-mortem examination without inquest),

Major-General Sir R. LUCE moved to leave out the words in Subsection (1): "post-mortem examination may prove an inquest to be unnecessary," and to insert instead the words:—

"An inquest may be rendered unnecessary by a report to him from a duly qualified medical practitioner recently in attendance on the deceased, he may direct such a medical practitioner to furnish a report, or if he is of opinion that an inquest may be rendered unnecessary by a post-mortem examination."

He said that the object of the amendment was to reduce the number of unnecessary inquests. The clause as it stood allowed a coroner to order a post-mortem in certain cases, and on the result of that examination to decide whether he should hold an inquest or not. The amendment would provide that in cases where a post-mortem was not necessary the coroner should have the power to call for a report from the doctor who had been attending the patient before death, and as a result an inquest might be unnecessary. This was not a new principle. A considerable amount of evidence was brought before the Departmental Committee in 1909, and the principle already existed in Scotland. The principle was also in operation in a particular coronership in Durham, and though it had been in practice for 30 years, it had never been challenged in the Law Courts. The coroner of Durham stated that by this method he had been able to reduce the number of inquests by 50 per cent. From his own personal experience he (Sir R. Luce) could say that a large proportion of inquests had been unnecessary and could easily have been dispensed with.

Mr. RHYS DAVIES said he was quite in favour of the proposal to reduce the number of unnecessary inquests, but were they not, if they passed this amendment, practically transferring the work of the coroner to the medical practitioner? He agreed that the certificate of the medical practitioner would be very important in most cases, but there were cases in which medical practitioners themselves were involved in certain practices which were undesirable.

Lieut.-Colonel FREMANTLE said that the amendment would regularise a practice which had existed to a certain extent. He received a letter on the previous day from a medical practitioner of great experience in a typical area covering the whole county. He wrote:—

"We frequently view the body, and if everything appears to warrant the view that death was due to natural causes, especially if the doctor has previous knowledge of the deceased, we give a written report to the coroner stating our opinion as to the cause of death. This suffices, does away with the expenses of an inquest, and the doctor gets no fee for his trouble."

The amendment would put this on a regular footing, and enable the coroner to demand such a report.

Captain HACKING said this was a very interesting subject, and there was a great deal to be said for the arguments put forward in support of the amendment. Mr. Rhys Davies had said that this would mean that the medical practitioner would be responsible for the inquest, but that was not the case. The coroner must accept full responsibility; he merely got advice from the medical officer. But the question of cost entered into the matter. This amendment, with the two consequential amendments, provided that the doctor should be paid half a guinea for his report. If this meant a necessary report in writing, it was at present open to the local authority to provide for any reasonable and necessary expenditure involved. As a matter of fact the Durham County Council, under the Schedule of Disbursements of the 1887 Act, allowed a fee of 10*s.* 6*d.* for a report. There appeared to be no reason to suppose that that was illegal, and he suggested that the medical profession, instead of asking for legislation on a matter of this kind, should move to get other local authorities who did not have this power to provide in schedules for such a fee, and if the doctors were successful in that way, as he had no doubt they would be, then the backward authorities could be brought into line by approaching the Secretary of State under Clause 29 (Subsection (2) (*b*)) to prescribe an appropriate fee for this work.

After further discussion,

Sir R. LUCE said the class of case dealt with here had developed from custom. A patient had been under a doctor for a considerable time. Perhaps he was not acutely ill, and he was not seen by the doctor for a few weeks. He might be known to be suffering from heart disease. The patient died suddenly without having seen the doctor for a few weeks or a month or two. It was extremely common for the coroner to refuse to accept an ordinary death certificate from the doctor, and an inquest was held. The doctor,

however, knew all about the patient, and could perfectly well give the coroner full information if he was properly asked to do so in writing, and in that way he could entirely avoid the necessity for an inquest.

The amendment was negatived by 21 votes to 7.

On Clause 22 (power of coroner to request specially qualified persons to make post-mortem and special examinations),

Mr. LEE moved an amendment requiring a coroner to give notice of his intention to hold a post-mortem or special examination to the trade-union representative of the deceased, and providing that such trade-union should have the right to be represented by a medical practitioner at the examination. He said that rightly or wrongly there was a prevailing idea among the families of men who died as the result of accidents that the medical man appointed by the coroner was in some way hostile to their interests, and he moved this amendment in order to secure the fullest opportunity for the family to know that complete justice had been done to their case.

Lieut.-Colonel FREMANTLE said he was in sympathy with the ostensible object of this proposal. The medical profession were only too glad to have any other medical evidence brought in to reassure suspicious minds among the lay public that the medical men had done their best and had been accurate. He thought the family ought to be represented, but he did not understand why a special privilege should be given to the trade-union representative. The matter should be left to the family, and they could, if they so desired, notify a trade-union representative under the ordinary law.

Sir R. LUCE said that although he had great sympathy with the principle of the amendment, there were considerable difficulties in the matter. In cases where the interests of the trade-union and those of the employers clashed, that would introduce the difficulty of having to consider also the rights of the employer. Most of these places were not very suitable for having a crowd to watch the post-mortem.

Captain HACKING said that he thought that it was wrong that this onus should be placed on the coroner. If the relatives cared to be represented or desired to leave the matter in the hands of the trade-union, in all likelihood the coroner would not object. There appeared to be no necessity for putting this into the Bill and making it a hard-and-fast rule. The Home Secretary had powers through the Lord Chancellor to make rules in connexion with a matter of this kind, but in all probability it would not be necessary to take action. There were occasions when a post-mortem must be carried out immediately, and it might be a very serious thing to take away the right of a coroner to order a post-mortem immediately in the interests of justice.

The amendment was negatived by 16 votes to 10.

Mr. LEE moved a further amendment to empower a trade-union in a case where the question of workmen's compensation was likely to arise, to call the medical practitioner who had attended the post-mortem or special examination on their behalf at the inquest, and ask him questions, and he should have a right to answer such questions and give evidence on any matters arising out of the examination.

Captain HACKING said that if a doctor had actually attended the post-mortem and the coroner knew he was in court, surely it would be a most extraordinary thing if he was not called to give evidence. If a coroner did not carry out his duties in such an obvious respect, the Home Secretary would certainly have something to say on the matter, and would cause an inquiry to be made.

The amendment was negatived by 16 votes to 10.

The Bill was further considered in Standing Committee on Wednesday, Dec. 8th. Mr. MORGAN JONES was in the chair.

On the further consideration of Clause 22,

Mr. SMITHERS moved an amendment that in cases where the coroner was informed by some person that in his belief the death of the deceased was caused partly or entirely by the improper or negligent treatment of a medical practitioner, or other person, that information need not be given on oath, but that the coroner could take action to prevent such medical practitioner or other person performing or assisting at any post-mortem or special examination made for the purposes of the inquest on information received.

Captain HACKING said that if it were placed at the discretion of a coroner to say that a certain doctor should be prohibited from performing a post-mortem, it would be casting a very obvious slur on certain members of the medical profession, probably without any cause and before even an inquiry had been made. The Bill as drafted afforded a much better mode of procedure.

The amendment was withdrawn.

Sir R. LUCE moved an amendment providing that a medical practitioner or other person should have the right, if he so desired, to be present or be represented at a post-mortem or special examination in a case where it was alleged that the death of the deceased was caused by the improper or negligent treatment of such medical practitioner or other person. The object of the amendment, he said, was to strengthen the position of the medical practitioner in these cases, especially if it was possible that a person might make an accusation on oath in the court after the proceedings had begun. He had known of no cases in which a coroner had refused to allow a medical man to be represented, but in view of the very definite ruling in the Act as it stood that the medical man should not direct or assist in the post-mortem examination, it seemed right that he should have his position guarded in the way he had suggested. He realised that this provision was put into the old Act because it was possible that a medical man who was quite unscrupulous might spoil the post-mortem examination. In fact, he believed it was put in on account of a very definite case in which a medical man was suspected of murder by poison. He actually jogged the elbow of the man who was performing the post-mortem examination and upset the contents of the stomach so that they could not be examined afterwards. One realised that a medical man in such circumstances should have no direct part in the post-mortem examination, but since he was debarred from that, it seemed right that he and other people concerned should have the right to be represented at the post-mortem examination.

Mr. RHYS DAVIES supported the amendment.

Captain HACKING suggested that Sir R. Luce should withdraw his amendment, and that they should adopt a form of words providing that "such medical practitioner or other person shall have the right, if he so desires, to be represented at any such post-mortem examination." He thought they might cut out the special examination.

Sir R. LUCE said he thought he could agree to that proposal. He agreed that it was impossible to have representation on all occasions at special examinations which might last for days or weeks. He thought that the post-mortem would cover the ground.

Lieut.-Colonel FREMANTLE said he thought that the legal justice of the case applied as much to the special as to the post-mortem examination. There was also the possibility that the accusation might be false, and the practitioner, by being present, might help to elucidate the facts in the interests of right and justice.

Captain HACKING said that he thought that he had met the Committee very fairly in offering this concession. He thought that they might leave the question of the special examination to the discretion of the coroner.

After further discussion Sir R. LUCE withdrew his amendment, and the form of words suggested by Captain HACKING was agreed to.

On Clause 23 (fees to medical witnesses),

Sir R. LUCE moved an amendment to secure that the medical practitioners should be paid for each day's attendance to give evidence. At the present time, he said, the rule was that, however many days or however many times the court might adjourn, the doctor could only be paid a fee for one day, although he might have to attend the court two or three times. That procedure existed in no other court in the country, and he thought it ought to be abolished.

Captain HACKING said in substance he was quite prepared to accept this amendment, but if the hon. and gallant Member would withdraw it, he would move another form of words to provide that medical witnesses should receive one and a half guineas for each day on which they were required to attend.

Sir R. LUCE accepted Captain Hacking's offer.

Captain HACKING then moved the substituted form of words which he had suggested.

After some discussion, Captain HACKING'S amendment was agreed to by 18 votes to 2.

Captain HACKING moved an amendment to provide that the fee for a post-mortem examination should be two guineas, instead of one and a half guineas as provided in the Bill.

Mr. RHYS DAVIES said he wanted to know how it came about that Captain Hacking had succumbed so early to his hon. friends in connexion with these fees. What was fair for the doctors in the opinion of the Home Office when the Bill was drafted must be fair now. At the same time, he wished the Bill to pass.

Sir R. LUCE moved that the fee should be three guineas. He said that the Committee would realise that a post-mortem was not a pleasant job. It was a job of great importance and of considerable danger to the medical practitioner. Compared with other operations of the same kind requiring considerable skill it had hitherto been paid for disgracefully, and he was glad that the Home Office had agreed to some increase. But he did not think that the increase from one to two guineas was sufficient for the severe work that had to be done at a post-mortem.

The amendment to increase the fee to two guineas was agreed to.

Sir R. LUCE moved an amendment to provide that medical practitioners who made a post-mortem examination of the body of a deceased person (including a report, if any, of the result thereof to the coroner), and attended to give evidence at an inquest on the body, should receive four guineas for the first day of attendance and one and a half guineas for each subsequent day, instead of two guineas, as stated in the Bill. He said he understood that the Under Secretary was prepared to agree to three guineas in this case, and he thought they had better accept that proposal.

Sir R. LUCE withdrew his amendment, and Captain HACKING moved an amendment giving three guineas and one and a half guineas respectively.

Mr. RHYS DAVIES said he entered his protest against the way in which this clause had been amended. They were not opposed to proper payment to doctors, but he did not like the way in which this had been done. He was not so sure that had the medical practitioners been on the Labour side and not on the Conservative side the Under Secretary would have acceded so readily to their claims.

Captain HACKING pointed out that there were doctors who were members of political parties other than the Conservative party, and these fees were to be given to doctors generally. The Home Office considered that the present fees were too small for the work that was performed.

Captain HACKING'S amendment fixing the fees at three guineas for the first day and one and a half guineas for each subsequent day was agreed to by 14 votes to 6.

The Committee stage was concluded, and the Bill was ordered to be reported to the House.

Mental Deficiency Bill Dropped.

The Government have found it impossible, owing to the pressure of Parliamentary business at the end of the session, to make further progress with the Mental Deficiency Bill, and the measure has accordingly been dropped for this year.

HOUSE OF LORDS.

WEDNESDAY, DEC. 8TH.

MILK AND DAIRIES ORDER.

Lord STRACHIE moved: "That an humble address be presented to His Majesty praying that the Milk and Dairies Order, 1926, dated 6th July, 1926, be annulled." He said that he was not objecting to the Order *en bloc*, quite the contrary. He thought that many of the 33 articles were most excellent, necessary, and desirable. He was taking serious objection only to three. They would all agree as to the necessity for the utmost cleanliness to be observed by the milkers, that the cows should be kept clean and their udders free from dirt before they were milked, and also that the milk churns should be thoroughly and properly cleansed before use after being sent back. The American view was that 80 per cent. of the impurities in milk could be attributed to the handling of the milk. But what he objected to was the enormous expense which was put on owners large and small by certain provisions of this Order. He could not understand why Articles 27 and 29 of the Order, which provided for the keeping of milk churns and receptacles in proper order, should not come into force for one year and nine months. He could not help thinking that in this case the manufacturers had had a great deal more influence with the Ministry of Health than the agriculturists had. Surely it was most important that these churns should have a proper lid and that nothing of a contaminating nature should enter into them during transport. Article 8 provided that every county council and county borough should cause to be made such inspection of cattle as might be necessary and proper for the purposes of the Act and the Order. Why should it be necessary, Lord Strachie asked, for every county council and county borough to make an inspection of the whole of the cattle in their area? He thought that the onus should remain as it was now, on the owners of the cattle, to report to the local authority if and when they knew that any of their cattle were diseased. If the owners did not report any disease in their herd, then by all means let them be prosecuted. The noble lord also objected to Articles 12, 13, and 25 of the Order on the ground that they prescribed structural conditions in connexion with dairies and cowsheds which, he said, would impose enormous expense on owners and owner-occupiers of dairy farms. This was not a time when such expenditure could be afforded. He noted that Mr. Chamberlain had promised to send out a Circular to local authorities emphasising the need of the reasonable administration of the Order, having regard to the difficulties attaching to milk production, but even if such a Circular were sent out, there was no certainty that the local authorities would pay attention to it.

After some discussion,

Lord BLEDISLOE (Parliamentary Secretary to the Ministry of Agriculture) said that with some little knowledge of the conditions prevailing in most other civilised countries, he asserted that such a debate could not have taken place in a legislative chamber in any other civilised country of the world. In these matters most civilised countries were unfortunately very far ahead of us, because they had paid greater attention to the fact that the health of the community was undoubtedly affected injuriously by the consumption or ingestion of polluted milk, and had taken more drastic action in consequence. The consumption per capita of milk in this country was disgracefully small—in fact, smaller, as far as they knew, than in any other highly civilised country in the world; and all health authorities, as far as he knew, were prepared to admit that the health of the nation, and particularly of its children, was suffering in consequence of the inadequate consumption of milk. Noble lords might say that that did not affect the question under discussion, but he thought it affected it very materially, because if there was an opinion abroad—as there had been an opinion abroad, which had been exaggerated by enthusiasts and extremists in this matter—that there was what was sometimes called "poison in the milk pail," it acted as a serious deterrent to the consumption of milk among the poorer population, who sought to find some alternative, when there was no alternative, so far as the infantile population was concerned, to milk as a food. They were told on the best authority that the reason why farmers had not been able to make a sufficiently good milk contract was that there existed a surplus of milk at the present time in this country; or, in other words, there was an insufficient demand on the part of the population generally for the available supply. Was it not fair to assume that to some extent this was due to the fact that the milk supply was not all that the most enlightened people would like to see it in this country? Medical officers of health in certain cities to his knowledge had given public advice against the consumption of liquid milk by infants in their administrative areas, and had gone so far as to advocate in preference the consumption of milk powder or dried milk coming from foreign countries. That was not good for the dairy farmer or the dairying industry, and if they made some reasonable concession to enlightened public opinion on medical grounds it was more than possible that the demand for milk would increase and the dairy farmer in consequence would be more prosperous. The Ministry of Agriculture held the view to-day, based upon the reasons which he had submitted to their lordships, that it was not in the best interests of the farmers themselves to stand in the way of reasonable improvement of the methods of milking cattle and handling milk. For that reason they had been in quite amicable conference with the Ministry of Health in arriving at the final form of this Milk and Dairies Order.

On a division the motion to annul the Order was defeated by 63 votes to 21.

EXPERIMENTS ON STOLEN DOGS.

Lord BANBURY asked the Government whether their attention had been drawn to the case at Clerkenwell Police-court on Dec. 1st, where a man was charged with stealing a dog which he had sold to the University College School of Physiology; whether they were aware that a man was convicted at Bow-street on Nov. 20th for receiving two stolen dogs which he was taking to the University College School, and what steps they intended to take to stop this practice. The noble lord quoted an explanation issued by the College authorities after certain remarks had been made by Mr. Fry, the magistrate in the Bow-street case. In the course of the explanation it was stated that the professor of physiology had always taken special precautions to prevent the delivery of stolen dogs in that he required a written guarantee that all the animals so delivered by the man Hewett (who had been convicted at Bow-street of feloniously receiving two Irish terriers valued at £7 and of cruelly ill-treating the dogs) and the other dealer with whom the professor traded were legitimately obtained. Commenting on this, Lord Banbury said that no one, unless he was of opinion that in all probability the article had been stolen, would ask for a written guarantee that the article had been legitimately obtained. The dogs, which were stated to be of the value of £7 each, were bought by the School for 6*s.* each. If a diamond ring worth £50 was offered for a couple of sovereigns, one generally had some suspicion that something was wrong. Apparently this gentleman had no suspicion of that sort. The College explanation also stated "that the dogs found in the possession of Hewett at the time of his arrest were, so far as is known, not of the type required by the College; they were never offered to, and were consequently not seen by, anyone at the College." They were not seen by anyone at the College, Lord Banbury continued, because the detective had stopped the man at the door of the College. It was proved in evidence that he was going to take them to the College, and that he would have received 6*s.* each for them. In the report of the Clerkenwell Police-court case it was stated that "a boy of 14, who said he was 'animal attendant' at University College, said he had known the defendant for about four

weeks. He helped a man named Jackson to fetch dogs to the College." Lord Banbury said that it was curious that a boy of 14 should be employed to look after animals. When he brought in his Bill in the House of Commons to prevent dogs being vivisected, Dr. Chapple, then a member of the House of Commons, gave as a reason against the Bill that dogs were cheap. It would cost, he added, £5 to get a suitable monkey. It was evident, therefore, said Lord Banbury, that one of the reasons why it was necessary to have dogs for this purpose was because they could be obtained cheaply; and now they knew how it was that they were obtained. Dr. Swan, in giving evidence before the Royal Commission, was asked: "In addition to that, is it not the case that dogs are more expensive than other animals, so that the very lowest motive, the motive of pocket alone, would cause them to prefer other animals?" Let their lordships mark his answer: "You can steal a dog anywhere." Dr. Swan was then asked: "You do not mean to imply, do you, that the dogs used in physiological laboratories are stolen and not paid for?" He replied: "I have stolen dogs in my early days." Continuing, Lord Banbury said he thought it was clear that the habit of receiving stolen dogs was somewhat prevalent at these institutions. It was a matter which was very difficult to trace, but two cases had been brought to light in the last fortnight. He urged that something should be done to prevent this practice.

Earl RUSSELL said that he was not an anti-vivisectionist, but he suggested that stray dogs should be taken for this purpose that otherwise would be destroyed. That, he understood, was forbidden by law at present, but he would be glad to see that law repealed. If it could not be repealed, he suggested that it might be provided by Statute that dogs should not be used by physiological laboratories unless they had been bred by the laboratories themselves. One breeding establishment might be set up to supply several laboratories, and they might then be prohibited from using any dog of which they could not trace the history from birth. That would prevent this particular evil. Speaking not only for himself but for all lovers of dogs, he believed the public conscience had been roused by what had happened and was entirely in sympathy with the remarks both of Mr. Fry (the magistrate) and of Lord Banbury, and it would not rest until something had been done to make it impossible in the future.

Lord DESBOROUGH, replying for the Home Office, said that he did not believe for a moment that University College encouraged the stealing of dogs. The College authorities bought dogs for physiological purposes—he could not go into the matter as to whether it was a wise thing to do or not—from recognised dealers, and not only that, but they said that they asked for a written guarantee that the dog had been honestly come by. The College had no reason to believe that Hewett was not an honest dealer in dogs. He (Lord Desborough) fully joined in the sympathy which had been aroused in this case, and he would take any strong measures he could if he thought that his own dogs were going to be stolen and experimented upon. But these two instances did not make out a very strong case for the suggestion that this was a very prevalent thing, and the imputation that University College encouraged it seemed to him to be absolutely unfounded. He thought they had taken every precaution they possibly could. With regard to Earl Russell's suggestion he was told that every year in London 25,000 dogs were destroyed. He fully agreed with Earl Russell that those were the dogs which should be used for this purpose, always admitting that dogs should be so used, and he had defended that in the House before. He had no right on this new suggestion to speak for the Home Office, but as far as he knew they did not think it was a very wise provision in the Act of 1906, which absolutely prevented dogs that were going to be destroyed from being used for a useful purpose before they were painlessly destroyed. He did not know whether Earl Russell saw the other day that in destroying dogs they were burned and subsequently poisoned.

Earl RUSSELL: Subsequently poisoned?

Lord DESBOROUGH said he read in a newspaper that an accident happened to the asphyxiating chamber, the top was blown off, and the dogs were injured and subsequently poisoned. He would no more make an accusation against the Battersea Dogs' Home on that account than he would against the London School of Physiology that they were in the habit of buying stolen dogs or wishing people to steal dogs. He did not know what Lord Banbury wanted. They could not alter the law relating to vivisection that night, and he had not made any suggestion. But as to the suggestion of Earl Russell, he personally thought—and he believed the Home Office would agree—that it was a most excellent one, and he hoped something might be done in that direction.

Lord BANBURY said he would suggest that the Home Office should give instructions to the police to investigate the approaches to these different schools extremely carefully, and to prosecute in any case in which they found that a dog had been stolen, or had been received knowing that it had been stolen.

THURSDAY, DEC. 9TH.

Births and Deaths Registration Bill.

The Births and Deaths Registration Bill passed through Committee.

MONDAY, DEC. 13TH.

The Births and Deaths Registration Bill was read the third time and passed.

TUESDAY, DEC. 14TH.

The Coroners (Amendment) Bill.

The Lord CHANCELLOR moved that the Commons' amendments to the Coroners (Amendment) Bill should be agreed to. He said that he had gone through them very carefully, and he advised their lordships to agree with all the amendments.—The amendments were agreed to.

HOUSE OF COMMONS.

WEDNESDAY, DEC. 8TH.

University of London Bill.

The University of London Bill, as amended in Standing Committee, was considered on Report and read a third time.

Infantile Paralysis.

Mr. REMER asked the Minister of Health if his attention had been called to the outbreak of infantile paralysis in this country; if he was aware that in the United States of America, where the outbreak had been more serious, medical research had revealed that this complaint was caused by the exposure of uncooked foods to contamination with germs contained in dust, and that consequently a law had been passed providing in that country all such foods must be covered; if his Ministry had made any inquiries into this matter; and if he was prepared to make any statement.—Sir KINGSLEY WOOD (Parliamentary Secretary to the Ministry of Health) replied: The answer to the first part is in the affirmative. As regards the second part, my right hon. friend understands that, although it was claimed in America that the virus if this disease had been found in the dust of sick rooms, this claim has not been confirmed, and he is advised that there is no direct evidence that the virus is in fact transmitted by uncooked food, and there is no reason to think that this means of transmission of the disease is an important factor in the present prevalence.

Mental Deficients and Marriage.

Sir ROBERT GOWER asked the Minister of Health whether he would consider the desirability of introducing legislation making it a punishable offence to marry, or connive in the marriage of, any person known to be certified as a mental defective under the Mental Deficiency Acts.—Mr. NEVILLE CHAMBERLAIN replied: My hon. friend's suggestion is certainly worthy of consideration, but I doubt whether there is a sufficient measure of agreement as to facts or conclusions to justify the introduction of legislation at present.

Deaths from Lead Poisoning in the Pottery Trade.

Mr. SHORT asked the Home Secretary the total number of deaths due to lead poisoning in the pottery trade during 1925; the average age of the deceased; and whether an improvement was shown on 1924.—Captain HACKING (Under Secretary for Home Affairs) replied: The total number of deaths in 1925 was 5, and the average age 58. These figures are better than the corresponding figures for 1924, which were 18 and 52.

Inspector of Vivisection Laboratories.

Mr. BROMLEY asked the Home Secretary whether Lieut.-Colonel Lelean was still acting as inspector of vivisection laboratories under the Act; whether he had recently paid a visit to University College in that capacity; and whether he himself was the former holder of a vivisection licence.—Captain HACKING replied: Colonel Lelean resigned his post as inspector on Feb. 14th last. The rest of the question, therefore, does not arise.

Education Authorities and Physically Defective Children.

Mr. ROBERT MORRISON asked the President of the Board of Education how many local education authorities had made complete provision for the number of physically defective children under their jurisdiction; how many had made partial provision; and how many had not yet made any provision.—Lord E. PERCY replied: The question whether complete provision exists in any particular area for dealing with physically defective children is a matter of opinion, as it depends upon the thoroughness of ascertainment and on the nature of the standards adopted. In

263 areas provision is made for the education of substantial numbers of physically defective children at special schools, and in about 140 areas provision is made for the treatment of cripple children by way of orthopædic or similar schemes. In about 40 areas no provision has so far been made.

Mr. ROBERT MORRISON asked the President of the Board of Education the present estimated number of physically defective children who might benefit by admission to special schools; how many of these children were at present in special schools; how many in public elementary schools; how many in other institutions; and how many were not attending any school.—Lord E. PERCY replied: The total number of children ascertained by local education authorities in 1925, the latest year for which complete returns are available, as physically defective within the meaning of Section 55 of the Education Act, 1921 (including those suffering from some form of tuberculosis, those classed as cripples, and those classed as "delicate"), was 142,889. Of these, 25,769 attended special schools during that year, 94,332 were at public elementary schools, and 3857 were in other institutions, while 18,931 were not attending any school. As regards the children attending public elementary schools, it should be remembered that most of the delicate children require only a relatively short period at an open-air school, and the majority of the cripples can be so far benefited by orthopædic treatment as to render them capable of profiting from the instruction in ordinary elementary schools.

Approved Societies and Dental Fees.

Mr. RHYS DAVIES asked the Minister of Health whether his attention had been drawn to the fact that several large approved societies in Lancashire, providing dental benefit for their members, had refused to adopt the scale of fees and conditions of service as agreed upon by the Dental Benefit Joint Committee; that a considerable number of dentists had indicated their willingness to continue to do the work on the old scale of fees; that the Public Dental Service Association had in consequence informed such dentists that they were liable to be struck off the Dental Register by the Joint Dental Board; and what action he proposed to take in this matter.—Mr. NEVILLE CHAMBERLAIN replied: I am aware that a few approved societies in Lancashire and elsewhere are still reluctant to adopt the new scale of fees and conditions of service for dental benefit, and that some of them claim that they have obtained from a number of dentists an indication of willingness to accept a lower scale of fees. The opposition to the new scale is, however, daily growing less, as the advantages of the new arrangements drawn up by the Dental Benefit Joint Committee become more fully appreciated. As regards the third part of the question, I am informed that the Public Dental Service Association has called the attention of dentists to a warning notice issued by the Dental Board against anything in the nature of canvassing by or on behalf of dentists with a view to securing work by an offer to accept fees below those of the new agreed scale. I do not think that the circumstances call for any action on my part.

Health Insurance Contributions and Benefits.

Mr. THURTLE asked the Minister of Health if his department was in a position to state the amount of money paid by way of contributions to the health insurance scheme from the date of the Armistice to the year ending Dec. 31st, 1925; and the amount actually paid out to insured persons by way of benefits during the same period.—Mr. NEVILLE CHAMBERLAIN replied: The amount of money paid by way of contributions to the health insurance scheme in England and Wales for the seven years from Jan. 1st, 1919, to Dec. 31st, 1925, was £154,000,000. Of the amount of £143,000,000 spent on benefits in England and Wales during the same period, £86,000,000 represents amounts actually paid out to insured persons by way of benefits, and £57,000,000 the cost of medical benefit provided for them through insurance committees. The information asked for as respects the part of the year 1918 subsequent to the date of the Armistice is not available, as such statistics are compiled for complete calendar years only.

FRIDAY, DEC. 10TH.

Anterior Poliomyelitis after Vaccination.

Mr. GROVES asked the Minister of Health if he would make inquiries as to why no mention of vaccination was made on the death certificate of the young man of 19, whose name had been privately given to his department, who recently died from acute anterior poliomyelitis 14 days after vaccination.—Mr. NEVILLE CHAMBERLAIN replied: The certification of the cause of death is a matter which rests entirely with the medical practitioner in attendance. Inquiries have, however, been made into the circumstances associated with the death in question, and I am informed that vaccination was not entered on the death certificate because in the opinion of the certifying practitioner vaccination was not a primary, secondary, or contributory cause of death.

MONDAY, DEC. 13TH.

THE CORONERS (AMENDMENT) BILL.

The Coroners (Amendment) Bill was considered on Report.

Mr. GATES moved a new clause on behalf of the London County Council, providing that whole-time coroners appointed after the passing of the Act should make contributions towards their pensions at the rate of 5 per cent. of their salaries, and that they should be paid pensions calculated according to their length of service.

As there was no seconder, the amendment fell through.

Mr. PALING moved to omit Clause 23, which provides for fees to medical witnesses who, at the request of a coroner, make a post-mortem examination or attend an inquest. He said that Mr. Cook, a trade-union secretary, had gone to Moscow to bring back some new trade-union ideas. He was not sure that Mr. Cook would not do better if he went to the British Medical Association.

Lieut.-Colonel FREMANTLE: He would learn patriotism.

Mr. PALING said that he only moved the amendment to call attention to the difference in the treatment accorded to the doctors and the miners. He did not object to the Bill giving doctors increased remuneration for attending inquests. They probably deserved it.

Captain HACKING (Under Secretary for Home Affairs) said that the effect of the amendment would be that medical men would not get any fees at all.

Mr. RHYS DAVIES said that the amendment was put down as a protest against the manner in which the increase of fees had been made in committee. He asked if there were not some communications between the Home Office and the British Medical Association in the first instance as regarded the amount of fees to be inserted in the Bill.

Lieut.-Colonel FREMANTLE denied that there had been any machinations between the Government and the British Medical Association. He had personally come into the House of Commons untrammelled by any responsibility to the British Medical Association. He only supported an increase of medical fees in so far as he thought that it could be justified by the needs of the case from the point of view of the State. In this instance he and other of his hon. friends had not accepted the proposals made by the British Medical Association, and had put forward other proposals. They had a very hard job to convince the representative of the Home Office of the necessity and right of their case.

Dr. VERNON DAVIES protested against the attack made on the medical profession by the mover of the amendment. It was entirely unnecessary to make a comparison between medical men and miners. Speeches of that kind were apt to give a very wrong impression. Anything which endangered the good feeling between medical men and their patients was detrimental. If a guinea was a fair fee in 1844, surely at this time there should be some slight increase. There was a tendency in the Labour party to belittle the medical profession, and the harm that might do in the country might be very great.

The amendment was negatived.

The report stage was concluded.

On the motion for the third reading, Mr. RHYS DAVIES said that the Labour party had a very high regard for the medical profession.

In reply to questions, Captain HACKING said that the Home Secretary would direct coroners to allow trade-union representatives to attend inquests, and to allow medical men representing relatives to be present at post-mortem examinations.

The Bill was read the third time.

Vivisection Experiments on Dogs at University College.

Sir ROBERT GOWER asked the Home Secretary the number of dogs which had been used for vivisectional experiments at the University College School of Physiology during the past two years; and how many of such dogs had been used for vivisectional demonstrations before students.—Captain HACKING replied: 1147 dogs have been used for experimental purposes at University College during 1925 and 1926. Of this number 21 were used for demonstrations before students. By Section 3 of the Act it is laid down that experiments for this purpose may only be performed if a certificate is given by two of the scientific authorities specified in the Act that the experiments are absolutely necessary for the due instruction of the students, with a view to their acquiring physiological knowledge, or knowledge which will be useful to them for saving or prolonging life or alleviating suffering. Such experiments are required to be performed under anæsthetics, and the animals must be killed before recovering consciousness. All but 28 of the total number of animals were kept under anæsthetics during the whole of the experiment and destroyed before recovering from the anæsthetic.

Spahlinger Tests on Cattle.

Mr. HURD asked the Minister of Agriculture if his department had received a copy of the Report of the Geneva

State veterinary surgeons recording the success, which they stated to be beyond all hopes, of the Spahlinger tests now completed there with antituberculosis vaccine on cattle; and whether he contemplated any further steps to estimate the value of these reported results.—Mr. GUINNESS replied: The Ministry's knowledge of the tests of Mr. Spahlinger's vaccine which have recently taken place in Switzerland is limited to accounts which are published in the Press. In 1924 a committee was formed, under the chairmanship of Commander Bayley, R.N., which included prominent agriculturists, doctors, and veterinary surgeons. I am informed that this committee had complete plans for experimental trial of the vaccine, but was unable to obtain any vaccine from Mr. Spahlinger, and therefore the matter dropped. I understand that the committee is still in being, but I am unable to say whether it will be prepared again to undertake the trial of this vaccine.

Enforcement of Food Preservative Regulations.

Mr. TINNE asked the Minister of Health whether he was aware that the recent industrial unrest had diminished the demand for canned goods, and left traders with stocks which would otherwise have been absorbed; and would he postpone till June 30th the enforcement of the Public Health (Preservatives in Food) Regulations, 1925, so far as concerned canned peas and beans and Californian evaporated fruits.—Sir KINGSLEY WOOD replied: My right hon. friend has received representations to the effect stated in the first part of the question, and he proposes to deal with the matter by suggesting to local authorities that during the first part of 1927 they should abstain from proceeding under the regulations where reasonable attempts have been made to dispose of old stock.

Origin of Small-pox Cases in Brondesbury.

Mr. LANSBURY asked the Minister of Health whether the two small-pox patients who were removed to the Willesden Isolation Hospital from a nursing home in Brondesbury, on or about Oct. 29th last, had been vaccinated; how long these patients were under medical treatment in London before it was discovered that they were suffering from small-pox; whether it was now possible to say where these persons came from on their arrival in London; and what steps had been taken to trace the origin of the disease.—Sir KINGSLEY WOOD replied: My right hon. friend is informed that both these patients had been vaccinated; the interval between vaccination and attack by small-pox was approximately 26 years in one instance and 44 years in the other. In one instance the patient was under medical treatment for 19 days, and in the other for four days, before a diagnosis of small-pox was made. Both persons had been staying in Paris before their arrival in London, and the first case was presumably infected in France, while the second case was a contact with the first.

Government and Washington Hours Convention.

Mr. BENJAMIN SMITH asked the Minister of Labour whether, in view of the change in the industrial situation, it was the intention to proceed forthwith with the ratification of the Washington Hours Convention.—Mr. BETTERTON (Parliamentary Secretary to the Ministry of Labour) replied: As stated on Dec. 8th, it is the intention of the Government to consider, as soon as they conveniently can, the results of the London Conference and their bearing upon the question of the ratification of the Washington Hours Convention. Until that consideration has been given, I am unable to make any further statement in the matter.

Family Pension Scheme for All-India Services.

Mr. HAYES asked the Under Secretary of State for India whether a State contribution was provided for in the family pension scheme now under the consideration of the Government of India for the All-India Services other than the Indian Civil Service; and, if so, whether this State contribution was to be similar to that granted to the Indian Civil Service Family Pension Fund.—Earl WINTERTON replied: A Family Pension Scheme for European members of the All-India Services, including the Imperial Police Service, is at present under the consideration of the Government of India. The Government of India's views have not yet been received, and I regret that I cannot give any details of it at present. The services affected will be consulted before any scheme is brought into operation.

TUESDAY, DEC. 14TH.

Vivisection Experiments on Dogs and Cats in London.

Sir ROBERT GOWER asked the Home Secretary how many dogs used for vivisectional experimental purposes in registered premises in the London area since Jan. 1st of this year were not kept under complete anæsthesia during the whole time of the experiments; the nature of the experiment on each of such dogs; at which schools of physiology such experiments were respectively made; whether reports had been received from the authorities of such schools giving the reasons why such animals were not kept under complete anæsthesia during the continuance of the experiments; and what such reasons were.—Captain HACKING replied: 16 at University College, 5 at the Brown Institution. I cannot undertake to give details of individual experiments, but I may say that the object of the experiments was in 7 cases the investigation of dental diseases, in 5 insulin research, in 4 investigation of diseases of the tonsils, and in 5 investigation of the relation of the gall-bladder to intestinal diseases. The last part of the question appears to be based on a misapprehension. The Act requires no such reports as are mentioned; what it does require is that before any experiment can be performed which involves keeping the animal alive after it recovers from the anæsthetic a certificate must be given by two of the scientific authorities mentioned in the Act to the effect that killing the animal before it so recovers would necessarily frustrate the object of the experiment; and further, that before any such experiment is performed on a cat or dog, an additional certificate must be given by two of the same scientific authorities that for specified reasons the object of the experiment will be necessarily frustrated unless it is performed on an animal similar in constitution and habits to a cat or dog, and that no other animal is available for such experiment. These certificates were duly given in each of the cases mentioned above.

Young Man's Death after Vaccination.

Mr. BRIANT asked the Minister of Health whether the case of the young man of 19 who recently died about 14 days after vaccination, the name of whom had been given privately to him in a letter, dated Nov. 19th, from Mr. Arnold Lupton, had been reported to the Committee on Vaccination now sitting.—Sir KINGSLEY WOOD replied: Yes, sir.

Ministry of Pensions Appointments.

Mr. DENNISON asked the Minister of Pensions whether he intended to make further appointments of established officers in substitution for officers of the P class as area and deputy chief area officers; and what was the estimated extra cost to public funds of this policy during the current financial year.—Lieut.-Colonel G. F. STANLEY replied: It may be necessary from time to time to effect transfers of established officers to other posts in the Ministry as the fall in the volume of work may necessitate, as it is not administratively possible to exclude area offices from the field of consideration for such transfers. There is no additional charge on public funds involved in the appointments to which the hon. Member refers, the established officers mentioned having become available for appointment in area offices in consequence of savings effected in other branches of the Ministry.

PENSIONS FOR HOSPITAL STAFFS.—The General Council of King Edward's Hospital Fund for London has now decided that in making annual grants to hospitals they will take into account the amount spent on contributory pensions schemes. The draft scheme, based on the report of a special committee under the chairmanship of Mr. W. J. H. Whittall in 1919 (THE LANCET, 1926, i., 679 and 729), has continued to make progress since the Mansion House Conference of May 19th last. On July 5th a Provisional Council was formed comprising representatives of 69 hospitals and by Nov. 1st 88 hospitals had joined, representing 11,579 beds. Quotations are now to be invited from insurance companies for the various benefits contemplated. The annual premium is to be 15 per cent. of salary and emoluments (the latter being roughly the money value of board and lodging), two-thirds to be paid by the hospital and one-third by the individual. The policies are to mature at the age of 60, so that retirement can take place then or later in accordance with the regulations of the hospital concerned. The Provisional Council has defined the institutions eligible for participation in the scheme as follow: (*a*) voluntary hospitals; (*b*) consumption sanatoriums; (*c*) hospitals for incurables; (*d*) convalescent homes; (*e*) dispensaries; (*f*) King Edward's Hospital Fund for London, the Metropolitan Hospital Sunday Fund, the Hospital Saturday Fund, and the Hospital Saving Association; (*g*) private hospitals, mental and others, not run for profit; (*h*) the Incorporated Association of Hospital Officers; (*k*) nurses' coöperations, incorporated and approved; (*l*) Queen Victoria's Jubilee Institute for Nurses and affiliated associations and branches; (*m*) Ranyard nurses; (*n*) voluntary welfare centres; (*o*) the College of Nursing and the Royal British Nurses' Association; (*p*) such other kindred classes of institution as the Provisional Council may determine—and Sir Edward Penton, chairman of the Provisional Council, hopes that the premium rates may be settled early in the new year so that the scheme may then be ready for launching.

Medical News.

UNIVERSITY OF LONDON.—At examinations held recently the following candidates were successful :—

THIRD (M.B., B.S.) EXAMINATION FOR MEDICAL DEGREES.

With Honours.—Alexander C. Dalzell (*b*, *c*), Lazarus Hartston (*a*), Maurice Mitman (*a*, *d*), and Gerald H. Steele (*a*, *d*, University Medal).

(*a*) Distinguished in Medicine. (*b*) Distinguished in Pathology. (*d*) Distinguished in Surgery. (*c*) Distinguished in Midwifery.

Pass.—Dorothy R. Adams, Clifford E. Allen, Harold Awrounin, Shriharsh Chintaman Bakhle, James R. Beagley, Samuel A. Beards, Louis F. Beecle, Eric H. J. Berry, Edith D. Bowie, Robert J. Cann, Rose A. Carter, Evangeline A. Clark, John S. Coleman, Hugh A. Cooper, Arthur C. Counsell, Anne A. Craig, Samuel S. Cruden, Howell J. Davies, Muriel Davies, Doris L. Delittle, John C. G. Dickinson, John D. Durance, Elaine Œnone H. Earengey, Donald C. Fairbairn, Maurice Fishman, William Fletcher-Barrett, Wilfred F. Gaisford, Stanley C. Gawne, Percy L. Goitein, Minnie Gosden, Charles R M. Greenfield, James I. Griffiths, Reginald D. Gross, Leslie W. Hale, John G. Hamilton, Kempton P. Hare, Richard B. Hawes, William E. Heath, Frances M. Heaton, James C. Heweston, Norman G. Hill, Frederick D. M. Hocking, David P. Holmes, Benjamin B. Hosford, Douglas V. Hubble, Amelia M. Ison, Clifford James, Herbert N. James, Iorwerth H. Jones, Robert O. Jones, Isabel M. Jordan, Gladys Kay, Greta M. Langdon, Reginald H. Leigh, Reginald H. Little, George K. Loveday, Elsie Lyons, Margaret B. MacDonald, Norman W. MacKeith, Evelyn T. D. Maclagan, Douglas H. McLeod, Ian McPherson, Dorothy B. Marling, Mary A. Marshall, Stephen K. Montgomery, John G. Morgan, Dorothy L. Neate, George J. V. Nelken, George A. H. Norman, Herbert L. Oldershaw, Catherine E. Orr-Ewing, Evelyn M. Pakeman, William E. Parry, Charles E. Pearsons, Arthur D. Pegg, George E. G. Peirce, Louis M. J. R. Pilot, Isaac Price, Henrietta Procter, Muriel F. Prout, Daniel M. Pryce, Bertine M. Rix, Lewis H. Savin, Jacobus W. Schabort, Jonathan A. Screech, Eric C. Seward, Mary M. Sillito, Alan S. Simpson, Anthony J. D. Smith, William E. Snell, Ivor P. Spurrell, Eustace F. Stead, Edith A. Straker, Stephen V. Strong, Daniel E. Thomas, James D. S. Thomas, Oxburgh G. Tippett, John R. Tree, Betty C. Waters, Edith M. Webb, Arthur S. Wesson, Violet M. Weston, Edward A. White, Doris Williams, Jane C. Williams, Emily A. C. Wilson, Herbert F. Wilson, and James T. Wybourn.

The following students have passed in one of the two groups of subjects :—

Group I.—Douglas E. Barton, Doris D. Brown, Isabella M. G. Butler, Irene F. Callender, Tom E. Davies, Arthur E. de Chazal, Jean M. Dollar, Joel Gabe, Allen C. Hancock, Lynette Hemmant, Mary H. McC. Huggett, Rowland M. Jones, Eileen M. King, Miriam A. Lawson, William Leslie, Albert H. Levers, Michael F. B. Lynch, Barbara H. Mitchell, Doris Reynolds, Sibyl D. Rodgers, Ephraim S. Rudaizky, Margaret V. Saul, and Horace S. Townsend.

Group II.—William A. Ball, Arthur L. Banks, Raymond E. Barrett, Hilda M. P. Bond, Derek G. Bown, Denis A. Brigg, Helen M. Browne, Maurice R. Burke, Alfred L. Canby, Donald C. MacC. Ettles, John Evans, Leonora S. Evans, Bernard W. Goldstone, Donald P. Gray, Henry F. Hiscocks, Laurence Holmes, John G. Kingsbury, Edgar D. Lawrence, Joan J. Lush, Alexander C. MacLeod, Charles W. Marshall, Hakim M. Mikhail, Anna P. Momtgomery, Reginald T. Payne, Alice L. Robson, Edward H. Roche, Moses Sendak, Kenneth S. Smith, James E. Swyer, Mary C. Tugman, Mary M. Tulloch, John S. Whitton, Beatrice A. Wilkinson, Harry K. Williams, and Eric Wornum.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—At a meeting of the Council, held on Dec. 9th, Sir Berkeley Moynihan, the President, in the chair, the resolution carried at the annual meeting of Fellows and Members, asking the Council to take a postal vote of Fellows and Members on the question of admitting Members to direct representation on the Council of the College, was referred to a Committee for consideration.—Mr. E. Rock Carling, surgeon to the Westminster Hospital, Mr. A. E. Webb Johnson, surgeon to the Middlesex Hospital, and Mr. Claude Frankau, surgeon to St. George's Hospital, were elected Members of the Court of Examiners. Mr. C. H. Howkins, dental surgeon to the Birmingham Dental Hospital, was elected a Member of the Board of Examiners in Dental Surgery.—Sir Berkeley Moynihan was reappointed a representative of the College on the Court of Governors of the University of Birmingham, and Mr. Victor Bonney was appointed a representative of the College on the Central Council for District Nursing in London.—Diplomas of Fellow were conferred upon 27 candidates who passed the recent examination. Of 101 candidates presenting themselves for examination, 31 passed, but R. A. Brews (London), C. I. N. Morgan (St. Bart.'s), F. T. Ridley (Birmingham and London), and A. J. Wrigley (St. Thomas's and Guy's), who satisfied the examiners, are not eligible to receive the diploma until they have attained the requisite age. The following are the names and medical schools of the successful candidates :—

N. Asherson, Univ. Coll.; T. S. M. Barnett, Melbourne and Guy's; W. E. Barnie-Adshead, Birmingham and Guy's; R. C. Brown, Durham and London; E. A. Coldrey, St. Bart.'s; W. I. Daggett, Cambridge and King's Coll.; V. W. Dix, Cambridge and London; S. J. H. Griffiths, Bristol, Guy's, and London; A. J. C. Hamilton, Edinburgh and London; C. W. Harris, Toronto and London; P. R. Hawe, Liverpool; K. W. Heritage, London; A. L. P. Jeffery, St. Thomas's; P. Kiely, Cork and London; A. C. King, London; P. B. Kittel, Cambridge and St. Bart.'s; E. D'A. McCrea, Dublin; F. A. MacLaughlin, Belfast; P. Malpas, Liverpool and London; J. M. D. Mitchell, Aberdeen and St. Bart.'s; M. F. Nichols, Guy's and St. George's; K. O. Parsons, Guy's; G. D. Robb, Otago; J. S. Rowlands, Liverpool and Univ. Coll.; I. G. Sacks, Dublin; and L. H. Savin, King's Coll.

Diplomas of Member were conferred upon the following :—

A. C. Jepson, Cambridge and Guy's; P.N. Lahiri, Calcutta and Guy's; and L. A. Richardson, Cambridge and St. Thomas's.

Licences in Dental Surgery were conferred upon the following 83 candidates :—

L. R. Armstrong, S. K. Arnold, J. G. Avent, L. G. Baker, H. Bennison, M. Bewlay, I. Bishko, S. D. Bradley, E. J. Buxton, L. Catchpole, O. N. Catchpole, E. H. Clark, M. H. C. L. Clutterbuck, W. J. Coe, E. C. Councell, Mary E. O. Cross, Eileen M. Currie, R. G. Daplyn, E. N. Davey, D. G. Doran, H. W. Duchesne, C. M. Duckworth, N. S. Farnes, J. E. Forrest, I. Frankel, W. F. Fuller, Beryl Gardiner, G. D. Gibling, G. G. Grainger, R. Y. Greenfield, D. Gure, R. T. Hale, H. R. Hill, C. Hofman, S. S. How, L. H. Ide, H. O. B. James, H. W. Johnson, K. S. Keele, K. S. Law, H. P. Lawson, K. Lees, M. Lewis, A. Livingston, M.B., Ch.B., Marjorie E. E. Lodge, L. S. Lyons, A. McEwen, L. J. Martin, G. H. Mason, H. A. Mills, D. Morrison, E. R. Morten, L. G. W. Papenfus, M. M. Pellatt, G. R. Pidgeon, S. C. Post, G. Quinn, G. Radloff, P. C. Ranye, J. A. Reader, H. E. Rose, C. A. Rumball, J. J. Sanders, Luba Scott, G. J. C. Sem, A. Simaika, C. Skinner, E. S. Smith, Dorcas E. Sproulle, J. Stazunsky, J. W. Storey, C. T. Tayler, H. E. C. Terry, D. F. Turner, S. E. Wallis, J. Weakley, C. Welt, C. R. Wilshaw, C. K. Wilson, W. A. Wilson, H. W. Wright, H. S. Wright, and H. H. Wydell.

UNIVERSITY OF SHEFFIELD.—The following have passed the Final Examination for the degree of M.B., Ch.B.: George H. Arnison and Edna M. Stedeford.

ROYAL COLLEGE OF PHYSICIANS OF EDINBURGH.—The annual meeting of the College was held on Dec. 2nd. Dr. George M. Robertson was re-elected President for the ensuing year; Sir Robert Philip was nominated Vice-President; and Dr. G. Lovell Gulland, Dr. R. A. Fleming, Dr. Robert Thin, Dr. John Orr, and Dr. Edwin Matthew were re-elected to form the Council. At an extraordinary meeting held on the same day, Dr. Edward Arnold Carmichael and Dr. John Robert Lord were elected Fellows of the College. Dr. William Russell and Dr. John Orr were elected representatives on the Board of Management of the Royal Infirmary of Edinburgh.

UNIVERSITY OF MANCHESTER.—At examinations held recently the following candidates were successful :—

FINAL M.B. AND CH.B. EXAMINATION.

Helen G. M. Bennett, Pieter Bester, H. V. Crabtree, Margaret Egan, Ernest Firth, Ernest Heard, John Hunt, G. W. Jones, Joseph Parness, Harry Pigott, R. H. Poyser, Mary I. Prentice, Leonard Rosenthal, B. R. Sandiford, W. S. Slater, Donald Starr, and Florence V. Stephen.

The following candidates satisfied the examiners in the subjects indicated :—

Forensic Medicine.—Soloman Bernstein, Vera Urmson, and G. R. Walker.

Medicine.—G. R. Walker.

Hygiene and Preventive Medicine.—R. H. Barnes, Soloman Bernstein, Ralph Edmondson, Dorothy Guest, James Kemp, G. L. Normington, L. C. Peringuey, I. M. Preston, Nora Ridehalgh, R. F. Sheppard, R. H. Tootill, and Vera Urmson.

Obstetrics and Surgery.—R. S. Abraham, Dorothy Arning, Harold Arstall, A. H. Baker, Doris Bernard, Dorothy M. Bradley, Muriel M. Edwards, Arthur Hancock, G. D. Hithersay, J. H. Jones, James Kemp, H. E. Martin, Robert Newton, R. P. Osborne, H. A. Palmer, G. H. Racklyeft, Norah Regan, Marshall Robinson, Leonard Rosenthal, Eleanor B. Schill, Herbert Townley, F. F. Waddy, Josephine Walmsley, and K. H. Watkins.

Obstetrics.—S. K. Appleton, H. J. Brennan, S. L. Rowley, and Alfred Thomas.

THIRD M.B. AND CH.B. EXAMINATION.

Pathology.—M. M. Barritt, G. L. Brown (with distinction), Alice M. Butterworth, Alexandra W. Groves, J. H. Pattyson, Marian M. Reekie, J. F. Wilkinson, and Frederick Wraith.

Pharmacology.—Alexander Allan, H. S. Bagshaw, F. H. Bentley, Hedley Boardman, Edith M. Booth (with distinction), B. R. Bramwell, R. O. Brooks, J. A. K. Brown, Bessie H. E. Cadness, T. H. Chadwick, D. L. Cran, J. M. Greenwood, Christobel M. Hall, G. B. Hardman, W. H. Harris, E. Z. Levy, R. W. Luxton, Mary I. C. Mackintosh, A. S. McGowan, F. N. Marshall, A. B. Moffatt, W. H. Newton, J. R. Nuttall, H. J. O'Loughlin, J. H. Pattyson, G. W. Plowright, B. P. Robinson, Donal Sheehan, C. F. Stott, J. D. Todd, Nellie Wilson, and L. C. Wright.

MEDICO-LEGAL SOCIETY.—The annual dinner of this society was held on Dec. 10th at the Holborn Restaurant, with the President, Lord Justice Atkin, in the chair. Dr. A. S. Woodwark proposed the toast of "Medicine and Law," Sir John Rose Bradford replied for the medical, and Dr. A. H. Coley, President of the Law Society, for the legal profession. Mr. Justice Greer, proposing the toast of "The Medico-Legal Society," mentioned how closely the respective sets of problems of the two professions resembled one another. Doctors had often to diagnose on subjective symptoms, without being able to see inside the patient, and judges had to decide cases on evidence that might be imperfect or even dishonest. Two of the most important subjects of common interest to both to-day were those of the effects of nervous shock and of insanity. So far from medical witnesses being reluctant to give a plain "Yes" or "No," they were often positive when they should say, "Neither I nor anybody else can tell." The question of nervous shock and its effect was a typical one in which positive assertion was to be avoided. For his part he was always inclined to give the subject the benefit of the doubt. Doctor and lawyer were alike handicapped by not being able to see the sufferer as he would be five years afterwards. In their attitude to mental disease doctors and lawyers had taken up very different positions, but there was not so much difference between them as might at first sight appear. The issue to be decided by trial was not whether a man was suffering from mental disease, but whether that disease was of such a character that he could not be held responsible for his acts, or, under the McNaghten ruling, that he either did not know the nature and quality of his acts or, if he did, that he did not know he could be punished for them. The law had to be laid down with great strictness, and modified where necessary by those whose duty it was to advise His Majesty when to exercise the Royal prerogative. Juries were somewhat inclined to sympathy with the medical view and the "unwritten law," and he saw no case for relaxing the law as at present laid down. Lord Justice Atkin, in responding for the Medico-Legal Society, remarked that the distinction between insanity and "legal insanity" was one drawn by very few people in fact, but that there must be a degree of insanity fixed by law as a boundary between criminal responsibility and irresponsibility. It was important to abstain from language that might emphasise the difference in the views held by each profession. Not long ago a high judicial authority had denounced as fantastic the view that a person who committed a crime under an irresistible impulse produced by disease should be held irresponsible. On the contrary, that doctrine was unanswerable. The committee over which he presided had accepted it, and lawyers such as Sir Archibald Bodkin, the late Sir Richard Muir, Sir Herbert Stephen, and Sir Ernley Blackwell were not likely to hold "fantastic" views on any subject. His lordship also suggested that much good would result if doctors and lawyers could hear lectures from one another on the administration of the Workmen's Compensation Act. The toast of "The Guests" was proposed by Dr. R. Henslowe Wellington and answered by Lieut.-Colonel C. T. Samman, Junior Warden of the Apothecaries' Society, and Mr. A. MacMorran, K.C., the Treasurer of the Middle Temple.

DINNER TO SIR BERKELEY MOYNIHAN.—On Dec. 8th Sir Berkeley Moynihan was entertained to dinner at Leeds by the British Medical Association in Yorkshire. Mr. Alfred Gough presided, and in proposing the toast, "The President of the Royal College of Surgeons," said that for at least a quarter of a century Sir Berkeley Moynihan had been one of the most prominent figures in British surgery. His election to the Presidency of the Royal College of Surgeons did not amount to the conferment of a distinction, but rather to the recognition of a distinction. Mr. A. L. Whitehead recalled the time when Sir Berkeley Moynihan was a student at the old Leeds Medical School. When he went to the Leeds Infirmary he had found there a wonderful group of surgeons—Jessop, McGill, Ward, and Littlewood. The only one of the group remaining was the greatest of them, Sir Arthur Mayo Robson. It might be said of Moynihan that he had acquired the best from all of them. At first he had had a hard struggle and some disappointments, but his book, "Abdominal Surgery," had aroused interest all over the world, and his work had received wider and wider recognition. Perhaps the qualities which most helped him to become a successful surgeon were his insistent attention to detail, combined with a wide general outlook, and his insistent desire to improve technique. His powers of expression would have made it easy to leave surgical practice for literature or politics, but fortunately those temptations had been resisted. The magic of his tongue had always been at the disposal of those with a righteous cause, and his last effort, his appeal for the Cancer Research Fund, which had resulted in raising the magnificent sum of £130,000, had been marvellous. Some great men engrossed in their work seemed to be devoid of humanity, but as Sir Berkeley Moynihan had grown as a surgeon he had also progressed as a man. Dr. A. Hawkyard said that no one citizen of Leeds had ever made the city so famous as had Sir Berkeley Moynihan. Apart from his eminence as a surgeon he was one of the first six orators in this country. Sir Berkeley Moynihan, in reply, said that however diverse the roads travelled, the goal reached at the end was very likely to be the same. In his cradle he had been dedicated to the Army, but he had chosen the perhaps less glorious but more remunerative path of saving life rather than of destroying it. Had he joined the Army, escaped death, and won distinction, he would have been made a Major-General in the very same month as this rank was actually conferred on him. In his student days nothing was less conceivable than that a student of the Leeds School of Medicine—perhaps the humblest and poorest student in the school—should have been the first surgeon outside London to be made President of the Royal College of Surgeons. He felt that he owed everything to Jessop and McGill. He thought he cause of surgery was advanced by men who served it rather differently. There were, in the first place, the men of genius, of great original creative minds, who made the great generalisations, who had the force to put ideas in motion. Then there were those who could capture the new idea almost at the moment of its birth, and make it marketable in all the countries of the world; they were the apostles of the new faith. And then there were the men who kept the thing going. They had perhaps no great gifts except the gifts of the craftsman; on the stage of surgery they were rather actors than authors. The pre-eminence of Leeds in surgery—for there was a pre-eminence of Leeds in surgery—had been due to the fact that it had produced one or two men entitled to be placed in the first category—Spencer Wells, William Hey, and, he almost thought, Mayo Robson, who was the incomparable surgeon of his time; it had produced many men of the second category and comparatively few of the third. Leeds had taken its place as a school of surgery second to none. Sir Berkeley Moynihan went on to speak of the reciprocity between surgeons in the North of England and of the *Journal of Surgery*. There were those who said that the generation just coming to an end had had great luck. So they had, and they had done the best they could with it. He thought the Listerian epoch was over; but he thought the future incalculably brighter than the past had been. Surgery was now the safe weapon for research and if that were true, how was surgery to advance? It could only advance by going back to the beginning of things again, by harking back to biology in its broadest sense, by going hand-in-hand with physicists, biochemists, chemists, and physiologists. In conclusion, Sir Berkeley Moynihan said that their tribute to him had touched him deeply as a tribute to something he valued much more—to the great tradition that Leeds had set up a century and a half ago and had never allowed to weaken since.

FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION.—The Fellowship has arranged the following special courses for January. From Jan. 10th to 22nd the Prince of Wales's General Hospital, Tottenham, will hold an intensive course in medicine, surgery, and the specialties. The daily sessions will last from 10.30 A.M. to 5.30 P.M. On Jan. 10th a two weeks' combined course in diseases of children will begin at the Royal Free Hospital and the Children's Clinic. From Jan. 11th to Feb. 5th there will be a series of lecture-demonstrations on psychological medicine on Tuesdays and Saturdays at 11 A.M. at the Bethlem Royal Hospital. From Jan. 17th to 29th an intensive course in cardiology will be held at the National Hospital for Diseases of the Heart. As entry to this course is limited to 20, early application is desirable. Courses in obstetrics, lasting two weeks or a month, can be arranged at the Queen Charlotte's Hospital. Every week the City of London Maternity Hospital holds a course in obstetrics and child welfare, personal application for which must be made to the office of the Fellowship, which can also arrange for clinical assistantships at the Samaritan Hospital. The series of lectures on Emergencies in Medicine and Surgery will begin again on Jan. 27th. Demonstrations in clinical surgery and ophthalmology will also be resumed in January. Syllabuses of the special courses and copies of the programme of the general course and of the *Post-Graduate Medical Journal* may be had from the Secretary of the Fellowship, at 1, Wimpole-street, London, W. 1.

BRITISH MEDICAL ASSOCIATION.—At 8 P.M. on Monday, Jan. 24th, 1927, Sir Berkeley Moynihan will deliver the Hastings Lecture in the Great Hall of the British Medical Association. His subject will be Cancer and How to Fight It, and Mr. Neville Chamberlain, Minister of Health, will take the chair. Admission will be free by tickets obtainable on application to the Financial Secretary, B.M.A. House, Tavistock-square, London, W.C. 1.

IRISH FREE STATE AND THE MEDICAL REGISTER.—President Cosgrave made a brief announcement in the Dail last week dealing with the question of the Medical Register. He said that it might be necessary before the Christmas adjournment to give notice of the extension of the Medical Act for three months. Nevertheless, it might not be necessary to take the full three months, as agreement was practically achieved, and they were now working out details.

NEW DEWSBURY INFIRMARY. — Dewsbury and District Infirmary, which serves a large area, is no longer adequate to the demands upon it, and it has been decided to erect a new building on an eminence overlooking the town. The cost is estimated at £90,000, of which one-half is in hand. The existing hospital has 60 beds; the new one will contain 101, but the plans provide for future extensions up to 150 beds. There will be a nurses' home to accommodate 50 members of the nursing staff.

ROYAL NORTHERN HOSPITAL.—It is announced that series of post-graduate courses are to be held at the Royal Northern Hospital, Holloway-road, London, N.7, beginning on Tuesday, Jan. 4th, 1927, and continuing throughout the year except during the months July, August, and September. Two sets of courses will be held: the first will be open to all practitioners, free of charge, and will consist of (1) weekly lectures or demonstrations on Tuesdays at 3.15 P.M., and (2) intensive courses, lasting one week, to be held in February, May, and October. The second course, on Recent Advances in Medicine, is designed for practitioners preparing for higher medical examinations. This will be held three times a year, the first being arranged for next March, and a fee of 5 guineas will be charged. Full particulars of these courses may be had from the Dean of the Hospital, Dr. E. G. B. Calvert.

Medical Diary.

Information to be included in this column should reach us in proper form on Tuesday, and cannot appear if it reaches us later than the first post on Wednesday morning.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

WEST LONDON POST-GRADUATE COLLEGE, West London Hospital, Hammersmith, W.

MONDAY, Dec. 20th.—10 A.M., Mr. Macdonald: Genito-Urinary Operations. 12 noon, Mr. Simmonds: Fractures and Applied Anatomy. 2 P.M., Dr. Scott Pinchin: Medical Out-patients.

TUESDAY.—12 noon, Dr. Burrell: Demonstrations of Chest Cases. 2 P.M., Mr. Addison: Operations. 2 P.M., Mr. Sinclair: Surgical Out-patients.

WEDNESDAY.—10.30 A.M., Dr. Burnford: Medical Wards. 2.30 P.M., Mr. Donald Armour: Surgical Wards. 2 P.M., Dr. Owen: Medical Out-patients.

THURSDAY.—10 A.M., Dr. Grainger Stewart: Neurological Dept. 2 P.M., Mr. Simmonds: Surgical Out-patients. 2 P.M., Mr. Bishop Harman: Eye Dept.

FRIDAY.—10 A.M., Sir Henry Simson: Gynæcological Operations. 10.30 A.M., Dr. Dowling: Skin Dept. 2 P.M., Mr. Vlasto: Throat, Nose and Ear Dept.

Operations, Medical and Surgical Out-patients, Special Departments, daily, 10 A.M. to 5 P.M. Saturdays, 10 A.M. to 1 P.M.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.

MONDAY, Dec. 20th.—10 A.M., Surgical Clinic. 2 P.M., Medical Cases in the Wards. 2.30 P.M. to 5 P.M., Medical, Surgical, and Gynæcological Clinics. Operations.

TUESDAY.—2.30 P.M. to 5 P.M., Medical, Surgical, Throat, Nose, and Ear Clinics. Operations.

WEDNESDAY.—2.30 P.M. to 5 P.M., Medical, Skin, and Eye Clinics. Operations.

THURSDAY.—11.30 A.M., Dental Clinic. 2.30 P.M. to 5 P.M., Medical, Surgical, and Ear, Nose, and Throat Clinics. Operations.

FRIDAY.—10.30 A.M., Throat, Nose, and Ear Clinics. 2.30 P.M. to 5 P.M., Surgical, Medical, and Children's Diseases Clinics. Operations.

LONDON SCHOOL OF DERMATOLOGY, St. John's Hospital, 49, Leicester-square, W.C.

TUESDAY, Dec. 21st.—5 P.M., Dr. A. C. Roxburgh: Urticaria.

CENTRAL LONDON THROAT, NOSE, AND EAR HOSPITAL, Gray's Inn-road, W.C.

WEDNESDAY, Dec. 22nd.—1.45 P.M: Dr. Norman Mackeith: Hearing Tests.

JAMES MACKENZIE INSTITUTE FOR CLINICAL RESEARCH, St. Andrews.

TUESDAY, Dec. 21st.—4 P.M., Major Walter Elliot, M.P., Under Secretary of Health: Clinical Research in its Relation to the Public Health Services. Discussion to be opened by Dr. G. Matthew Fyfe.

Appointments.

DAWSON, WILLIAM S., M.D. Oxf., M.R.C.P. Lond., has been appointed Professor of Psychiatry in the University of Sydney, New South Wales.

HALLCHURCH, W., M.B., Ch.B. Edin., Hon. Medical Officer in Charge of the new Ear, Nose, and Throat Department of the Dudley Guest Hospital, Wolverhampton.

HARRIS, W. H., M.B., Ch.B. Aberd., Assistant Medical Officer of Health for Aberdeen.

Certifying Surgeons under the Factory and Workshop Acts: NEWTON, E., M.R.C.S., L.R.C.P. Lond., D.P.H. (Tilbury); MERCER, E. B., M.B., Ch.B. Edin. (Littlebourne, Kent).

Vacancies.

For further information refer to the advertisement columns.

Bedford County Hospital.—Asst. H.S. At rate of £130.

Birkenhead Borough Hospital.—Hon. Radiologist.

Birmingham, Queen's Hospital.—Cas. Surg.

Bury Infirmary.—Second and Third H.S.'s. At rate of £175 and £150 respectively.

Calcutta Corporation.—Health Officer. Rs.1500 per mensem.

Cardiff, University College of South Wales.—Prof. of Anatomy. £1000.

Charing Cross Hospital.—Med. Registrar. £150.

Dagenham Urban District Council.—M.O.H. and Asst. County M.O. £550 and £250 respectively.

Glasgow, Govan District Asylum, Halfwayhouses.—Third Asst. M.O. £275.

Greenwich Metropolitan Borough.—Obstet. Consultants. 3 to 5 guineas per consultation.

Hammersmith, School Treatment Centre, 10, Mall-road, W.—M.O.

Lancaster County Mental Hospital.—Temp. Asst. M.O. 7 guineas weekly.

London Hospital, E.—Vacancy on Hon. Medical Staff.

London Temperance Hospital, Hampstead-road, N.W.—H.P. At rate of £100.

Middlesbrough County Borough Mental Hospital.—Asst. M.O. &c. £550.

Newcastle-upon-Tyne, Princess Mary Maternity Hospital.—Asst. Res. M.O. At rate of £40.

Oxford, Radcliffe Infirmary and County Hospital.—H.S. and Obstet. H.P. Each at rate of £120.

Prince of Wales's General Hospital, Tottenham, N.—Hon. Asst. Radiologist, Physio-Therapeutist. Also Hon. Assts. S.

Reading, Royal Berkshire Hospital.—H.P. and Third H.S. Each at rate of £150.

Rochdale Infirmary and Dispensary.—Jun. H.S. £200.

Royal Army Medical Corps.—Commissions.

Royal London Ophthalmic Hospital, City-road, E.C.—Seven Refraction Assts. £100.

St. Mary Abbots Hospital.—Res. Phys.

St. Marylebone General Dispensary, 30, Marylebone-lane, W.—Hon. Phys.

St. Mary's Hospital, W.—Med. Registrar. £200.

St. Peter's Hospital for Stone, &c., Henrietta-street, Covent Garden, W.C.—Clin. Assts.

Sheffield, Jessop Hospital for Women.—Asst. H.S. At rate of £1000.

Sheffield Royal Infirmary.—H.S. At rate of £80.

Sheffield University.—Dept. of Pharmacology, Research Asst. £600.

Sutton, Surrey, Downs Hospital for Children.—Asst. M.O. £550.

Ventnor, Isle of Wight, Royal National Hospital for Consumption and Diseases of Chest.—Jun. Res. M.O. At rate of £300.

West London Hospital, Hammersmith, W.—Hon. S. to Throat, Nose, and Ear Dept. Also Hon. Obstet. Reg.

Worcestershire County Council.—Asst. County M.O. £600.

The Secretary of State for the Home Department gives notice of a vacancy for a Medical Referee under the Workmen's Compensation Act for the districts of the Denbigh and Ruthin, and Rhyl County Courts. Applications should reach the Private Secretary, Home Office, not later than Jan. 3rd next year.

Births, Marriages, and Deaths.

BIRTHS.

ATKINSON.—On Dec. 2nd, at Stainer-street, S.E., the wife of Dr. C. Hewitt Atkinson, of a daughter.

DANDO.—On Dec. 8th, at Queen's Club-terrace, Kensington, W., the wife of Dr. Dando, of a daughter.

SATOW.—On Dec. 9th, in Oxford, to Margaret, the wife of Lawrence L. Satow, *M.C.*, M.R.C.S.—a son.

SMITH.—On Dec. 10th, at Idrisyn, Hodford-road, Golders Green, the wife of A. Francis Smith, L.D.S., of a daughter.

DEATHS.

JARDINE.—On Dec. 7th, at Richmond, Surrey, James Jardine, M.B., C.M. Edin., in his 81st year.

NOEL-COX.—On Dec. 6th, at Clifton-gardens, W., Herbert Lovis Noel-Cox, M.D., F.R.A.S.

RISK.—On Dec. 7th, of heart failure, at Collingham-place, S.W., Colonel E. J. Erskine Risk, A.M.S. (retd.).

WARE.—On Dec. 5th, in London, Sydney Arthur Thomas Ware, M.B., B.S., of the Sudan Medical Service, aged 32 years.

N.B.—A fee of 7s. 6d. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Comments, and Abstracts.

OCCUPATION AND HEALTH.

A FURTHER part of "Occupation and Health, an Encyclopædia of Hygiene, Pathology, and Social Welfare," published by the International Labour Office, Geneva, has just been issued. It contains brochures 36 to 45. This encyclopædia is being published in rather a novel way; each part contains such articles as are completed without waiting for the whole to be ready. Consecutive pagination finally will not be possible, but each article will be able to be arranged alphabetically for binding. The international character of this work is maintained in the present collection of brochures which are contributed by Dr. L. Carozzi (Geneva), Prof. A. Sclavo (Sienna), Prof. D. Ottolenghi (Bologna), and Dr. Brezina (Vienna). The article on anthrax is excellent and the statistics given show how the disease only occurs by infection from animals; in Great Britain the woollen industry has been the main source of cases with the handling of hides and skins second; in France hides and skins stand first, wool second; while in Germany hides and skins are first and wool is of little moment. Animal vaccination is well explained, and the early use of serum in all suspected cases is insisted upon; here the author, Prof. Sclavo, modestly says nothing of the part he has played in developing this line of treatment. The articles dealing with the soap industry, with picric acid, and with ammonia are good examples of accurate condensation. This publication is being issued simultaneously in French and English, and the translations, judging by the English text, are well done.

CALENDARS AND DIARIES FOR 1927.

A CONVENIENT block calendar for 1927 (the A.F.D. Diary) has been issued by the Anglo-French Drug Co (238A, Gray's Inn-road, London, W.C.). There is provided for each day throughout the year a sheet of white paper, 4 inches square, for written memoranda, and the stiff, hinged cover provided preserves the privacy of the notes and lends the calendar the appearance of a bound book. This year the cover is brown instead of black. A certain number are available gratis to medical men on application to the company.

A NEW JOURNAL OF ABSTRACTS.

THE *Revue Médicale* is a weekly journal in French, edited and published in Brussels, the purpose of which is to abstract the principal medical papers and books of all countries as soon as possible after they appear. Judging from Nos. 15 and 16, the matter selected for abstraction is mostly French and Belgian, but there is a sprinkling of German and English, and the scope will doubtless widen as the number of pages increases. The size of the review is about 6 in. by 9 in., and every page is perforated so that it may be easily removed for filing in a special index cabinet which the proprietors supply to subscribers. The price of this review is 40 francs a year, post free, and subscriptions may be sent to Compte chèque postal, *Revue Médicale* No. 413, 90, Brussels.

AN INFORMATIVE CATALOGUE.

THE second edition of Messrs. Ogilvy and Co.'s catalogue of microscopical illuminating apparatus should be of interest to pathologists who require standardised conditions of illumination for microscope work. The Hartridge-Williams axial illuminator, an entirely British production, is illustrated and described in detail and appears to combine all the essentials for constant and efficient lighting with a minimum of eyestrain. Axial illumination, by eliminating the variable factor of reflection, allows the observer to make any number of examinations under identical conditions. The Silverman illuminator for the microscopy of opaque surfaces, the K.B.B. lamp for work with monochromatic or ultra-violet light, and all the well-known forms of bench light are illustrated.

AN APPOINTMENT BOOK FOR DENTISTS.[1]

A HANDY appointment book, specially devised for dentists, is arranged for half-hourly appointments throughout the day. An indexed address book which slips into a pocket in the cover is a useful feature. The dangerous drugs register in the prescribed form, included as a separate booklet, is a timely reminder, in view of a recent prosecution, that dentists are affected by the legislation on this point. Most dentists keep cocaine in some form for local use, but many do not realise that all purchases of cocaine must be entered in a special book.

[1] Diary of Appointments, 1927, with Address Book. London Dental Manufacturing Co. 6*s.* 6*d.* Interleaved 8*s.* 6*d.*

THE COMPLETE WHITAKER.

Whitaker's Almanack for 1927 appears in two forms, of which the complete edition (pp. 896, green and red cloth, price 6*s.* as before) has been rearranged and contains some new features. Following the index is a convenient table of abbreviations in common use, including the various medical degrees and diplomas. Among the 57 short articles appearing under "Questions of the Day," towards the end of the volume, are handy summaries of the proposed factory legislation, of Sir George Newman's report to the Ministry of Health, and of the report of the Lunacy Commission. There is the customary paragraph on medical fees and charges, and a note—correct but all too brief—on the function of the General Medical Council, followed by a list of medical schools in London, with the names in each case of the medical secretary or dean. Under "English Counties and Shires" appears a scheduled list of sheriffs, clerks of the peace, and chief constables, in which the medical officer of health occupies the place of easy reference in the last column. Apart from definitely medical items, the whole book is pregnant with exact information indispensable to medical men whose work brings them into contact with public bodies and institutions. The index is so complete as to make cross-reference simple and easy. The abridged edition (pp. 240, paper cover, price 1*s.* 6*d.*) is a new book which contains as many index entries as any previous Almanack, but which has been shorn of details, although it still contains "Questions of the Day," the parliamentary summary, and the events of the preceding year. The Abridged Whitaker is small enough to be carried in the pocket.

ULSTER MEDICAL SOCIETY.

THE annual dinner of this society was held at Belfast on Dec. 9th, Dr. M. J. Nolan, the President, in the chair. Amongst the guests were the Duke of Abercorn (Governor of Northern Ireland), Sir William Turner (Lord Mayor of Belfast), Judge Thompson (Recorder of Belfast), Dr. R. W. Livingstone (Vice-Chancellor of Queen's University), Viscount Bangor, and Sir Frederick Moneypenny. After the loyal toast had been honoured, the President gave the toast of "His Grace the Governor, and Prosperity to Ireland," and the Duke of Abercorn responded. Mr. James A. Craig submitted the toast of "The City of Belfast," and the Lord Mayor responded. Dr. R. W. Leslie proposed "Our Guests," and the Recorder, the Vice-Chancellor of Queen's University, and Viscount Bangor responded. Mr. C. G. Crymble proposed the toast of the Royal College of Surgeons in Ireland, and Mr. Andrew Fullerton, who is a member of the Society, responded. Prof. J. A. Lindsay proposed the toast of The President, and Dr. Nolan responded. Subjects of importance referred to in the speeches included the need for a hostel for men students at the University, the deficiency in maternity accommodation in Belfast, and desirability of reform of the Lunacy Laws. The proceedings concluded with the singing of the National Anthem.

AN ANCIENT EGYPTIAN COSMETIC.

AMONG Mr. Howard Carter's finds in the tomb of Tut-Ankh-Amen at Luxor was a sealed calcite jar containing a cosmetic. The jar had been sealed naturally by the crystallisation of certain salts and had remained in a sterile atmosphere for more than 3000 years; when it was opened it was found to contain about a pound of fatty matter, of the colour of chocolate, and containing yellow nodules. It melted with the heat of the hand, and its smell was described by various observers as something like that of coconut, broom, or valerian. Mr. A. Chaston Chapman, F.R.S., and Mr. H. J. Plenderleith, of the British Museum Laboratory, communicated an account of its analysis to the *Journal of the Chemical Society* for October last. The results do not allow them to say what the fat was that formed 90 per cent. of the whole, but since the chemical evidence excluded coconut or palm-kernel oils, and it is improbable that any vegetable fat with such a small amount of olein as this specimen contained would have been available, it was probably animal fat. The remaining 10 per cent. was composed of some resin or balsam. The smell was probably one of the results of oxidation in this resin, as the odoriferous constituents of coconut are, as far as is known, not stable enough to survive the action of oxygen and moisture over so long a period.

ROYAL SOCIETY OF MEDICINE.—The Society's house and library will be closed from Thursday, Dec. 23rd, to Tuesday, Dec. 28th, both days inclusive.

UNIVERSITY OF SYDNEY.—The Agent-General for New South Wales announces that Dr. W. S. Dawson, of the Maudsley Hospital (London County Council), has been appointed professor of psychiatry. Mr. Horace Finnemore, B.Sc., of Guy's Hospital Medical School, has been appointed lecturer in pharmacy.